

CHORD=526°02'16"W 99.03

	LEGEND
SYMBOL	DESCRIPTION
	EXISTING CONTOUR 2' INTERVAL
	PROPOSED CONTOUR 2' INTERVAL
×362.2	SPOT ELEVATION
	WALKOUT BASEMENT
—5F —5F—	SILT FENCE
-55F55F-	SUPER SILT FENCE
ECM	EROSION CONTROL MATTING
LOD	LIMIT OF DISTURBANCE
*	STREET LIGHT PER F-09-057
	UNMITIGATED 65dBA NOISE LINE
10° 50	PROPOSED STORM DRAIN PIPE
<i>8</i> *5	PROPOSED SEWER
	15% to 24.9% Slope
The same of the sa	PROPOSED LANDSCAPING PER F-09-057
	EXISTING TREES PER F-09-057
	REVERSE GUTTER PAN SLOPE
— 55F/TP—	EXISTING COMBINATION SUPER SILT FENCE AND TREE PROTECTION PROVIDED BY F-09-057
— 55F —	EXISTING SUPER SILT FENCE PROVIDED BY F-09-057
	FOREST CONSERVATION
	FOREST CONSERVATION PLANTING
	PRIVATE STORMWATER MANAGEMENT, ACCESS, DRAINAGE & UTILITY EASEMENT PLAT NO.

LE LANDS

FLOO	UBLIC 100 YEAR OPLAIN, DRAINAGE & EASEMENT LINE TABLE
SYM	BEARING & DISTANCE
FP1	5 16°36'25" W 20.27'
FP2	5 27°50'40" W 70.94'
FP3	5 08°59'16" W 40.57'
FP4	5 03°03'11° W 93.61'
FP5	5 15°01'13" W 46.63'
FP6	5 04°47'17° E 86.11'
FP7	5 32°22'07" E 36.07'
FP8	5 17°59'15" E 91.00'
FP9	5 06°43'05" E 38.38'
FP10	5 00°58'29" W 35.22'
FP11	5 04°59'50" E 07.97'
FP12	5 00°37'56" W 49.41'
FP13	5 20°30'30" W 27.00'
FP14	5 10*56'26" E 29.56'
FP15	5 20°28'07° E 48.02'
FP16	5 26°07'03" E 60.94'
FP17	5 19°42'24" E 64.03'
FP18	5 27°49'56" E 46.89'

WETLANDS LINE TABLE

5ym	Sym Bearing & Distance		Sym	Bearing & Dist	ance
WL1	N 26°08'29" E	27.04	WL27	5 04°55'23" E	31.64'
WL2	N 10°02'32" W	43.99'	WL28	5 64°39'43" E	23.09'
WL3	N 04°58'20" W	43.29'	WL29	5 37°40'50" W	9.49'
WL4	5 63°56'41" W	72.27	WL30	5 05°11'31" E	5.50'
WL5	N 19°49'23" W	100.46'	WL31	5 51°19'35" E	11.15'
WL6	N 12°33'45" W	167.34'	WL32	5 35°30'31" E	20.30'
WL7	N 68°59'11" W	75.55'	WL33	5 41°10'19" E	5.29'
WL8	5 75°03'52" W	90.72'	WL34.	5 66°01'37" E	2.45'
WL9	5 11°04'20" E	25.07'	· WL35	5 74°44'16" E	2.84'
WL10	N 59°46'09" E	90.77'	WL36	5 90°00'00" E	4.21
WL11	N 18°21'09" W	93.02'	WL37	5 07°06'29" E	14.29'
WL12	5 03°17'10" E	75.48'	WL38	5 55°03'05" W	27.37'
WL13	5 45°31'49" E	89.72	WL39	5 37°15'07" W	34.23'
WL14	N 06°12'46" E	24.84'	WL40	5 11°24'10" W	26.98'
WL15	N 09°20'56" E	46.32'	WL41	5 69°10'52" W	79.42'
WL16	N 49°12'26" W	28.61'	WL42	5 22°49'21" W	54.36'
WL17	N 12°27'27" W	30.06'	WL43	5 54°29'45" W	21.77'
WL18	N 45°07'31" W	29.81'	WL44	5 22°39'53" E	96.35'
WL19	N 05°41'07" W	49.80'	WL45	5 54°01'46" E	61.03'
WL20	5 64°32'54" E	24.60'	WL46	N 63°37'24" E	45.91'
WL21	5 22°41'23" E	43.15'	WL47	5 84°32'27" W	17.16'
WL22	5 17°10'38 " E	37.43'	WL48	5 03°52'40" W	46.99'
WL23	5 32°46'52" E	76.68'	WL49	N 02°25'22" W	21.20'
WL24	5 56°43'12 " E	35.08'	WL50	5 83°11'38" E	47.45'
WL25	5 74°29'12" E	73.66'	WL51	N 83°26'24" E	17.00'
WL26	5 63°44'12" E	30.13'	WL52	N 03°41'36" W	10.88'

6 Rev. grd to show Ex. Conditions Lots 6-9
5 Rev Units 6-9 From Griffin to Griffin Hall

1 Rev. to add fee simple lots per F-10-113

FISHER, COLLINS & CARTER, INC. CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS

HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 9757 EXPIRATION DATE 15 2/28/10.

新士 B 466.76 路 B 465.43 記

EX. WGP'S MAINLINE DRIP FACILITY LOCATION

BULK PARCEL 'C'

EX. FIBER OPTIC CABLE FO - ZONED PSC FO -

Lot 42 | Lot 43 FF 474.64 | FF 473.31 B 465.90 | B 464.57

VALVES.

FF 482.63 B 473.89

FF 480.63 - B-471.89

11/24/10 DATE

BUILDERS NV HOMES RYAN HOMES

6005 MARSHALEE DRIVE 6005 MARSHALEE DRIVE SUITE 130 ELKRIDGE, MD. 21075 ELKRIDGE, MD. 21075 410-379-5956 410-379-5956

DEVELOPER	OWNERS *
VERLY WOODS DEVELOPMENT CORPORATION C/O LAND DESIGN AND DEVELOPMENT, INC. 5300 DORSEY HALL DRIVE, SUITE 102 ELLICOTT CITY, MARYLAND 21042 443-367-0422	WAVERLY WOODS DEVELOPMENT CORPORATION, C/O LAND DESIGN AND DEVELOPMENT, INC. 5300 DORSEY HALL DRIVE, SUITE 102 ELLICOTT CITY, MARYLAND 21042 (443-367-0422)

APPROVED: H	IOWARD COUNT	Y DEPARTMEN	T OF PLANN	ING AND 2	ZONINO	3	
Kut	s leulu	-sh				13/11	
Chief, Divisio	n of Land Dev	elopment				Date	
Chief	pment Enginee	rian Obdelan			<i>.</i>	. Date	
Lniej, Develo	pment Enginee	M. A.	•			Luck.	
Director - De	epartment of F	Planning and Z	Coning		-111	- Date	
PROJECT			SECTION		LOT	NOS.	
GTW'S WAVE	RLY WOODS		1	4	LO]	[5 6 THRU 11 [5 40 THRU 43	
PLAT	BLOCK NO.	ZONE	TAX/ZONE	ELEC. 1	DIST.	CENSUS TR.	
21427- 21435	3 & 4	P5C	16	THIRI	D .	60300	

SEWER CODE

5992000

STA, 0+66,40 TO STA. 2+20.67 R=500.00' L=162.19

CHORD=515°41'41"W 161.48

UTILITY EASEMENT PLAT NO. 21433

- PUBLIC 100 YEAR FLOODPLAIN, DRAINAGE & UTILITY EASEMENT

WATER CODE

K-02

PUBLIC STORM DRAIN, DRAINAGE

-100 YR. FLOODPLAIN-

EXT PUBLIC FOREST CONSERVATION

1.06 AC. REFORESTATION
0.19 AC. NON-CREDITED
RETENTION
PLAT NO. 20933

FUTURE SEATING AREA

Δ=25°21'55° TAN=112.52

REVISED SITE DEVELOPMENT PLAN

PLAN

SCALE: 1" = 30'

AGE RESTRICTED ADULT HOUSING GTW'S WAVERLY WOODS SECTION 14

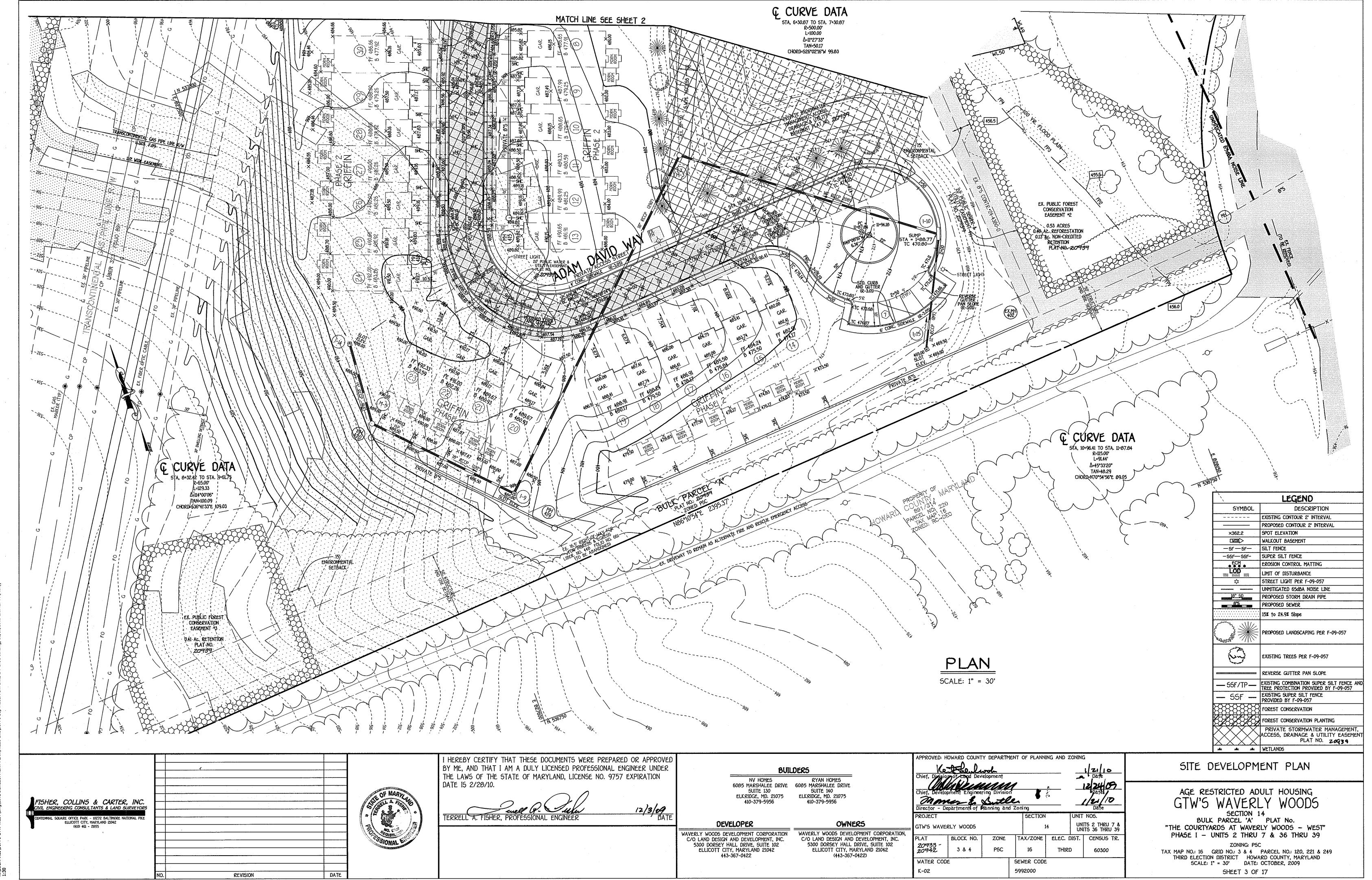
BULK PARCEL 'C' "THE COURTYARDS AT WAVERLY WOODS - WEST" PHASE I - LOTS 6 THRU 11 & 40 THRU 43

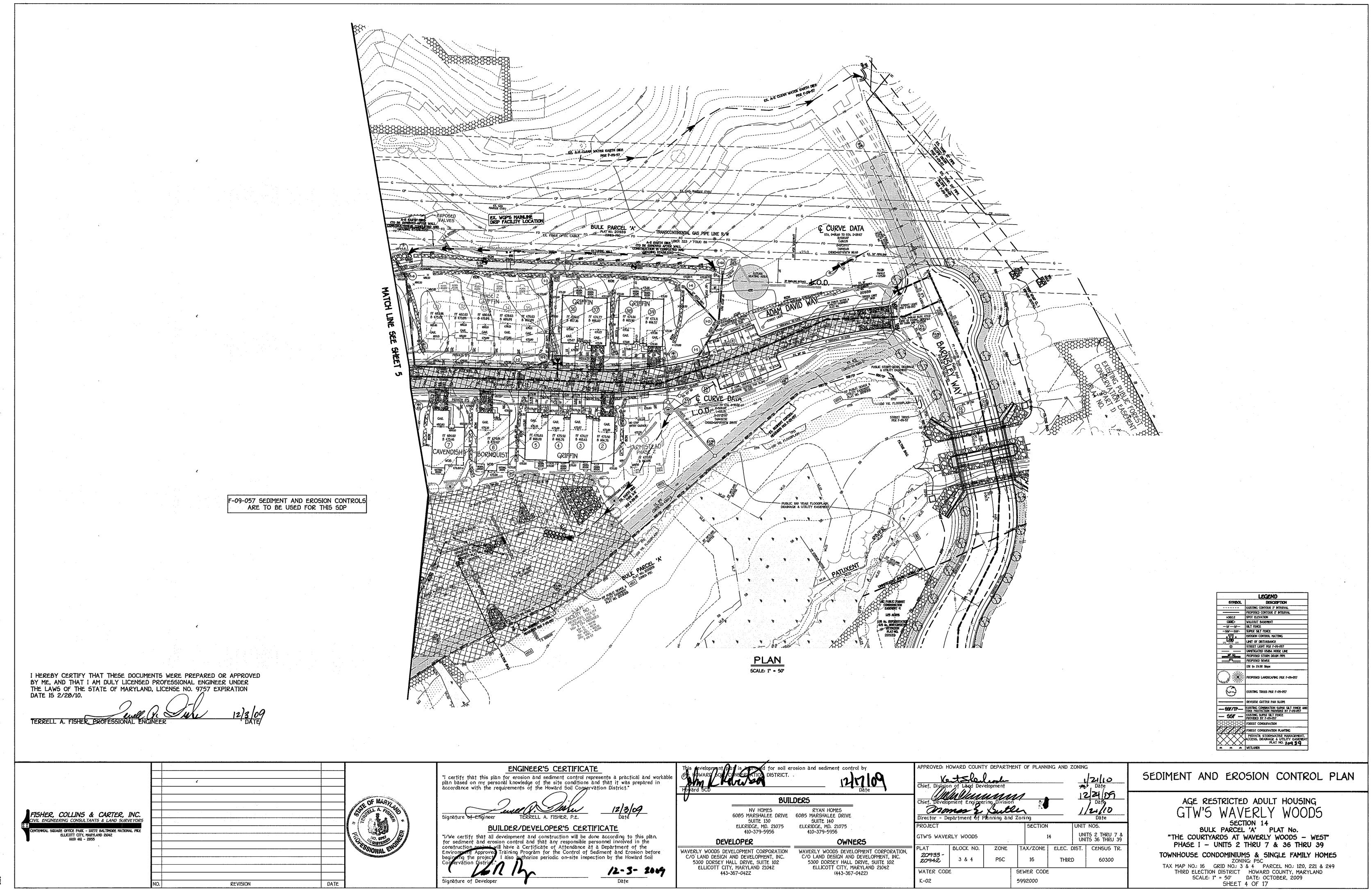
TAX MAP NO.: 16 GRID NO.: 3 & 4 PARCEL NO.: 120, 221 & 249
THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: 1" = 30' DATE: JUNE 4, 2010 SHEET 2 OF 17

4 Rev grading on Lot 10 to show as built conditions 3-20-12
3 Rev. hise, Lot 10, from Bornquist to Armistead 12-2-11
2 Rev hee, Lot 11, from Cavendish to Bornquist model 7-28-11

9.27.12

1-12-11 DATE





DATE

MATCH LINE SEE SHEET 4

DESCRIPTION LINT OF DISTURBANCE

\$\pmu\$ STREET LIGHT PER F-09-057

LINTIGATED 65dbA NOISE LINE

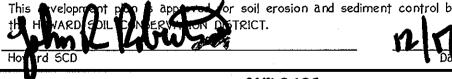
\$\pmu\$ PROPOSED STORM DRAIN PIPE

\$\pmu\$ PROPOSED STORM DRAIN PIPE

\$\pmu\$ \$\pm 15% to 24.9% Slope PROPOSED LANDSCAPING PER F-09-057 - REVERSE GUTTER PAN SLOPE — SSF/TP— EXISTING COMBINATION SUPER SELT FENCE AND TREE PROTECTION PROVIDED BY F-09-057

— SSF — EXISTING SUPER SELT FENCE PROVIDED BY F-09-057 PRIVATE STORMWATER MANAGEMENT, ACCESS, DRANAGE & UTILITY EASEMENT PLAT NO. 2043

"I/We certify that all development and construction will be done according to this plan, for sediment and elosion control and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District



5300 DORSEY HALL DRIVE, SUITE 102 ELLICOTT CITY, MARYLAND 21042 443-367-0422

C/O LAND DESIGN AND DEVELOPMENT, INC. 5300 DORSEY HALL DRIVE, SUITE 102 ELLICOTT CITY, MARYLAND 21042 (443-367-0422)

PPROVED: H	OWARD COUNT	Y DEPARTM	IENT	OF PLANN	ING AND 2	ONINO	·_ ,
hief, Divisio	n of Land Dev	elopment				-	Date
hief, Develop	oment Enginee	ring Division	<u> </u>		•	13	124 (5)
irector - De	partment of	lanning and	Zor		<u>. </u>	_//	Date
ROJECT				SECTION		UNIT	NO5.
TW'S WAVER	RLY WOODS			1	4	UNI UNI	TS 2 THRU 7 & TS 36 THRU 39
_AT	BLOCK NO.	ZONE	T,	AX/ZONE	ELEC. (DIST.	CENSUS TR.
20933 - 20942	3 & 4	P5C		16	THIRI)	60300
VATER CODI	=		5E'	WER CODE			
K-02			59	92000			

PLAN 5CALE:1" - 50"

SEDIMENT AND EROSION CONTROL PLAN

AGE RESTRICTED ADULT HOUSING GTW'S WAVERLY WOODS SECTION 14

BULK PARCEL 'A' PLAT No. "THE COURTYARDS AT WAVERLY WOODS - WEST" PHASE I - UNITS 2 THRU 7 & 36 THRU 39

TOWNHOUSE CONDOMINIUMS & SINGLE FAMILY HOMES

ZONING: PSC

TAX MAP NO.: 16 GRID NO.: 3 & 4 PARCEL NO.: 120, 221 & 249

THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND

SCALE: 1" = 30' DATE: OCTOBER, 2009

SHEET 5 OF 17

CONDITIONS WHERE PRACTICE APPLIES This practice shall be used on denuded areas as specified on the plans and may be used on highly erodible or critically eroding areas. This specification is divided into Temporary Seeding, to quickly establish vegetative cover for short duration Olup to one

year), and Permanent Seeding, for long term vegetative cover. Examples of applicable areas for Temporary Seeding are temporary Soil Stockpiles, cleared areas being left idle between construction phases, earth dikes, etc. and for Permanent Seeding are lawns, dams, cut and fill slopes and other areas at final grade, former stockpile and staging areas, etc. EFFECTS ON WATER QUALITY AND QUANTITY Planting vegetation in disturbed areas will have an effect on the water budget, especially on volumes and rates of runoff,

infiltration evaporation, transpiration, percolation, and groundwater recharge. Vegetation, over time, will increase organic matter content and improve the water holding capacity of the soil-and subsequent plant growth. Vegetation will help reduce the movement of sediment, nutrients, and other chemicals carried by runoff to receiving waters. Plants will also help protect groundwater supplies by assimilating those substances present within the root zone. Sediment control devices must remain in place during grading, seedbed preparation, seeding, mulching and vegetative establishment to prevent large quantities of sediment and associated chemicals and nutrients from washing into surface waters.

SECTION 1 - VEGETATIVE STABILIZATION METHODS AND MATERIALS

A. Site Preparation i. Install erosion and sediment control structures (either temporary of permanent) such as diversions, grade stabilization structures, berms, waterways, or sediment control basins.

ii. Perform all grading operations at right angles to the slope. Final grading and shaping is not usually necessary for temporary seeding.

iii. Schedule required soil tests to determine soil amendment composition and application rates for sites hāving disturbed area over 5 acres.

B. Soil Amendments (Fertilizer and Lime Specifications)

Soil tests must be performed to determine the exact ratios and application rates for both lime and fertilizer on sites having disturbed areas over 5 acres. Soil analysis may be performed by the University of Maryland or a recognized commercial laboratory. Soil samples taken for engineering purposes may also be used for chemical analyses.

ii. Fertilizers shall be uniform in composition, free flowing and suitable for accurate application by approved equipment. Manure may be substituted for fertilizer with prior approval from the appropriate approval authority. Fertilizers shall all be delivered to the site fully labeled according to the applicable state fertilizer laws and shall bear the name, trade name or trademark and warrantee of the producer. iii. Lime materials shall be ground limestone (hydrated or burnt lime may be substituted) which contains

at least 50% total oxides (calcium oxide plus magnesium oxide). Limestone shall be ground to such fineness that at least 50% will pass through a *100 mesh sieve and 98-100% will pass through a *20 mesh sieve. iv. Incorporate lime and fertilizer into the top 3-5° of soil by disking or other suitable means.

Seedbed Preparation
i. Temporary Seeding a. Seedbed preparation shall consist of loosening soil to a depth of 3" to 5" by means of suitable agricultural or construction equipment, such as disc harrows or chisel plows of rippers mounted on construction equipment. After the soil is loosened it should not be rolled or dragged smooth, but left in the roughened condition. Sloped areas (greater than 3:1) should be tracked leaving the surface in an irregular condition with ridges running parallel to the contour of the slope.

Apply fertilizer and lime as prescribed on the plans. in corporate lime and fertilizer into the top 3-5" of soil by disking or other suitable means.

Minimum soil conditions required for permanent vegetative establishment:

1. Soil pH shall be between 6.0 and 7.0. Soluble salts shall be less than 500 parts per million (ppm). The soil shall contain less than 40% clay, but enough fine grained material 030% silt plus clay) to provide the capacity to hold a moderate amount of moisture. An exception is if lovegrass of serecia lespedezas is to be planted, then a sandy soil (<30% sil plus clay) would be acceptable.

Soil shall contain 1.5% minimum organic matter by weight.

Soil must contain sufficient pore space to permit adequate root penetration If these conditions cannot be met by soils on site, adding topsoil is required in accordance with Section 21 Standard and Specification for Topsoil.

Areas previously graded in conformance with the drawings shall be maintained in a true and even grade, then scarified or otherwise loosened to a depth of 3-5" to permit bonding of the topsoil to the surface area and to create horizontal erosion check slots to prevent topsoil to the surface area and to create horizontal erosion check slots to prevent toosoil from sliding down a slope.

Apply soil amendments as per soil test or as included on the plans.

Mix soil amendments into the top 3-5° of topsoil by disking or other suitable means. Lawn

areas should be raked to smooth the surface, remove large objects like stones and branches and ready the area for seed and application. Where site conditions will not permit normal seedbed preparation, loosen surface soil by dragging with a heavy chain or other equipment to roughen the surface. Steep slopes (steeper than 3:1) should be tracked by a dozer leaving the soil in an irregular condition with ridges running parallel to the contour of the slope. The top 1-3° of soil should be loose and friable. Seedbed loosening may not be necessary on

Seed Specifications All seed must meet the requirements of the Maryland State Seed Law. All seed shall be subject to re-testing by a recognized seed laboratory. All seed used shall have been tested within the 6 months immediately preceding the date of sowing such material on this job.

Note: Seed tags shall be made available to the inspector to verify type and rate of seed used ii. Inoculant - The inoculant for treating legime seed in the seed mixtures shall be a pure culture of nitrogen-fixing bacteria prepared specifically for the species. Inoculants shall not be used later than the date indicated on the container. Add fresh inoculant as directed on package. Use four times the recommended rate when hydroseeding. Note: It is very important to keep inoculant as cool as possible until used. Temperatures above 75°-80° F. can weaken bacteria and make the inoculant less effective. Methods of Seeding

Hydroseeding: Apply seed uniformly with hydroseeder (slurry includes seed and fertilizer), broadcast or drop seeded, or a cultipacker seeder. a. If fertilizer is being applied at the time of seeding, the application rates amounts will not exceed the following: nitrogen maximum of 100 bs. per acre total of soluble nitrogen. P205 (phosphorous): 200 bs/ac. K20 (potassium): 200 bs/ac.

Lime - use only ground agricultural limestone, (Up to 3 tons per acre may be applied by Normally, not more than 2 tons are applied by hydroseeding at any one time. Do not use burnt or hydrated lime when hydroseeding. Seed and fertilizer shall be mixed on site and seeding shall be done immediately and

without interruption.
ii. Dry Seeding: This includes use of conventional drop or broadcast spreaders. Seed spread dry shall be incorporated into the subsoil at the rates prescribed on the Temporary or Permanent Seeding Summaries or Tables 265 or 26. The seeded area

shall then be rolled with a weighted roller to provide good seed to soil contact.

Where practical seed should be applied in two directions perpendicular to each other.

Apply half the seeding rate in each direction. iii. Drill or Cultipacker Seeding: Mechanized seeders that apply and cover seed with soil.

Cultipacking seeders are required to bury the seed in such a fashion as to provide at least 1/4 inch of soil covering. Seedbed must be firm after planting. Where practical, seed should be applied in two directions perpendicular to each other. Apply half the seeding rate in each direction. Mulch Specifications (In order of preference)

Straw shall consist of thoroughly threshed wheat, rive or oat straw, reasonable bright in color, and shall not be musty, moldy, caked, decayed, or excessively dusty and shall be free of noxious weed seeds as specified in the Maryland Seed Law. ii. Wood Cellulose Fiber Mulch (WCFM)

a. WCFM shall consist of specially prepared wood cellulose processed into a uniform fibrous physical state.

WCFM shall be dyed green or contain a green dye in the package that will provide an appropriate color to facilitate visual inspection of the uniformly spread surry. WCFM, including dve, shall contain no germination or growth inhibiting factors WCFM materials shall be manufactured and processed in such a manner that the wood cellulose fiber mulch will remain in uniform suspension in water under agitation and will blend with seed, fertilizer and other additives to form a homogeneous slurry. The mulch material shall form a blotter-like ground cover, on application, having moisture absorption and percolation properties and shall cover and hold grass seed

in contact with the soil without inhibiting the growth of the grass seedlings, WCFM material shall contain no elements or compounds at concentration levels that will be phytol-toxic.

f. WCFM must conform to the following physical requirements: fiber length to approximately 10 mm., diameter approximately 1 mm., pH range of 4.0 to 8.5, ash content of 16% maximum and water holding capacity of 90% minimum.

Note: Only sterile straw mulch should be used in areas where one species of grass is desired.

 G. Mulching Seeded Areas - Mulch shall be applied to all seeded areas immediately after seeding.
 i. If grading is completed outside of the seeding season, mulch along shall be applied as prescribed in this section and maintained until the seeding season returns and seeding can be performed in accordance with these specifications.

ii. When straw mulch is used, it shall be spread over all seeded areas at the rate of 2 tons/acre. Mulch shall be applied to a uniform loose depth of between 1° and 2°. Mulch applied shall achieve a uniform distribution and depth so that the soil surface is not exposed. If a mulch anchoring tool is to be used, the rate should be increased to 2.5 tons/acre.

iii. Wood cellulose fiber used as a mulch shall be applied at a net dry weight of 1,500 lbs. per acre. The wood cellulose fiber shall be mixed with water, and the mixture shall contain a maximum of 50 lbs. of wood cellulose fiber per 100 gallons of water. Securing Straw Mulch (Mulch Anchoring): Mulch anchoring shall be performed immediately following mulch application to minimize loss by wind or water. This may be done by one of the following methods (listed by preference), depending upon size of area and erosion hazard:

i. A mulch anchoring tool is a tractor drawn implement designed to punch and anchor mulch into the soil surface a minimum of two (2) inches. This practice is most effective on large areas, but is limited to flatter slopes where equipment can operate safely. If used on sloping land, this practice should be used on the contour if possible.

ii. Wood cellulose fiber may be used for anchoring straw. The fiber binder shall be applied at a net dry weight of 750 pounds/acre. The wood cellulose fiber shall be mixed with water and the mixture shall contain a maximum of 50 pounds of wood cellulose fiber per 100 gallons

of water.

iii. Application of liquid binders should be heavier at the edges where wind catches mulch, such as in valleys and crest of banks. The remainder of area should be appear uniform after binder application. Synthetic binders – such as Acrylic DLR (Agro-Tack), DCA-70 Petroset, Terra Tax ll. Terra Tack AR or other approved equal may be used at rates recommended by the manufacturer to anchor mulch.

iv. Lightweight plastic netting may be stapled over the mulch according to manufacturer's recommendations. Netting is usually available in rolls 4' to 15' feet wide and 300 to 3,000 feet long. L. Incremental Stabilization - Cut Slopes

All cuts slopes shall be dressed, prepared, seeded and mulched as the work progresses. Slopes shall be excavated and stabilized in equal increments not to exceed 15'.

. Construction sequence (Refer to Figure 3 below): a. Excavate and stabilize all temporary swales, side ditches, or berms that will be used to convey runoff from the excavation.
b. Perform Phase 1 excavation, dress, and stabilize.

c. Perform Phase 2 excavation dress and stabilize. Overseed Phase 1 areas as necessary. Perform final phase excavation, dress and stabilize. Overseed previously seeder

Note: Once excavation has begun the operation should be continuous from grubbing through the completion of grading and placement of topsoil (if required) and permanent seed and mulch. Any interruptions int he operation of completing the operation out of the seeding season will necessitate the application of temporary stabilization.

J. Incremental Stabilization of Embankments - Fill Slopes Embankments shall be constructed in lifts as prescribed on the plans.

ii. Slopes shall be stabilized immediately when the vertical height of the multiple lifts reaches

15°, or when the grading operation ceases as prescribed in the plans.

iii. At the end of each day, femporary berms and pipe slope drains should be constructed along the top edge

of the embankment to intercept surface runoff and convey it down the slope in a non-erosive manner.

a sediment trapping device. iv. Construction sequence: Refer to Figure 4 (below). a. Excavate and stabilize all temporary swales, side ditches, or berms that will be used to divert runoff around the fill. Construct slope silt fence on low side of fill as shown in Figure 5, unless other methods shown on the plans address this area.
 b. Place Phase 1 embankment, dress and stabilize.

Place Phase 2 embankment, dress and stabilize. Place final phase embankment, dress and stabilize. Overseed previously seeder

areas as necessary.

Note: Once the placement of fill has begun the operation should be continuous from grubbing through the completion of and placement of topsoil (if required) grading and permanent seed and mulch. Am interruptions in the operation or completing the operation out of the seeding season will necessitate the application of temporary stabilization.

SEDIMENT CONTROL NOTES

D A MINIMUM OF 40 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LISCENSES AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION (313-1855). 2) ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN

CONFORMANCE WITH THE MOST CURRENT MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL AND REVISIONS THERETO. 3) FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN: a) 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES. DIKES, PERIMETER SLOPES AND ALL SLOPES STEEPER THAN 3:1. b) 14 DAYS

AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE. 4) ALL SEDIMENT TRAPS/BASING SHOWN MUST BE FENCED AND WARNING SIGNS POSTED AROUND THEIR PERIMETER IN ACCORDANCE WITH VOL. 1.

CHAPTER 12, OF THE HOWARD COUNTY DESIGN MANUAL, STORM DRAINAGE 5) ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDING (SEC. 51), SOD (SEC. 54), TEMPORARY SEEDING (SEC. 50). AND MULCHING (SEC. 52). TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.

6) ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMISSION FOR their removal has been obtained from the Howard County Sedimei CONTROL INSPECTOR

7) SITE ANALYSIS: 130.703 ACRES TOTAL AREA OF SITE AREA DISTURBED 6.95 ACRES AREA TO BE ROOFED OR PAVED 0.9545 ACRES AREA TO BE VEGETATIVELY STABILIZED 0.8725 ACRES TOTAL CUT 33,432 CU.YD6. TOTAL FILL 14,260 CU,YDS

OFFSITE WASTE/BORROW AREA LOCATION 19,145 CU.YDS. ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.

9) ADDITIONAL SEDIMENT CONTROLS MUST BE PROVIDED. IF DEEMED NECESSARY BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR. 10) ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 ACRES. APPROVAL OF THE INSPECTION ACENCY SHALL BE DECLIFSTED LIPON COMPLETION OF INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING. OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL

BY THE INSPECTION AGENCY IS MADE. 11) TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGHTS OR THAT WHICH SHALL BE BACK-FILLED AND STABILIZED WITHIN

ONE WORKING DAY, WHICHEVER IS SHORTER. SEQUENCE OF CONSTRUCTION e tracking permit nos. Associated with this subdivision are as follows:

a. No. 200960925 (MARRIOTTSVILLE ROAD) b. No. 200960962 (WAVERLY WOODS WEST) OBTAIN A GRADING PERMIT. NOTIFY 'MISS UTILITY " AT LEAST 40 HOURS BEFORE BEGINNING ANY WORK AT

1-600-257-7777. NOTIFY THE HOWARD COUNTY OFFICE OF CONSTRUCTION/INSPECTION AT 10-313-1330 24-HOURS BEFORE STARTING WORK. S. NO DISTURBANCE IS TO OCCUR UNTIL THE BASIN/POND COMPONENTS AND APPURTENANCES IS IN PLACE UNDER F-09-057.

4. CLEAR AND GRUB FOR SEDIMENT CONTROL MEASURES ONLY. INSTALL STABILIZED CONSTRUCTION ENTRANCE. (2 weeks)

5. INSTALL THE REMAINING SEDIMENT CONTROL MEASURES. (2 weeks)

6. OBTAIN PERMISSION OF THE SEDIMENT CONTROL INSPECTOR PRIOR TO PROCEEDING.

7. CLEAR AND GRUB FOR THE REMAINDER OF THE SITE. (4 weeks)

8. GRADE SITE TO THE PROPOSED SUBGRADE FOR EACH ROAD AND INSTALL THE STORM DRAIN SYSTEM AND UTILITIES. STABLIZE ALL ROADWAY SLOPES IMMEDIATELY UPON COMPLETION OF GRADING AS SHOWN. (4 weeks)

9. INSTALL BASE COURSE PAVING FOR THE PROPOSED ROADS. (2 weeks) 10. INSTALL STONE CONSTRUCTION ENTRANCE AND SILT FENCE FOR UNIT CONSTRUCTION.
REMOVE STONE CONSTRUCTION ENTRANCE FOR ROAD. (I week)

11. CONSTRUCT BUILDINGS. (3 months)
12. STABILIZE ALL AREAS AND OBTAIN PERMISSION FROM THE SEDIMENT CONTROL INSPECTOR 13. APPLY TACK COAT TO BASE COURSE AND LAY SURFACE COURSE PAVING. (I week 14. WHEN ALL CONTRIBUTING AREAS TO THE BASIN HAS BEEN STABILIZED AND WITH THE PERMISSION OF THE SEDIMENT CONTROL INSPECTOR, THE TEMOPRARY BASIN & SEDIMENT CONTROL DEVICES MAY BE REMOVED, BACKFELLED OR REGRADED TO THE PROPOSED FINAL GRADES FOR ALL SWM FACILITIES. STABILIZE ALL REMAINING AREAS WITH PERMANENT SEEDING NOTES. (4 weeks)
15.NOTIFY HOWARD COUNTY OFFICE OF INSPECTIONS AND PERMITS FOR A FINAL INSPECTION

SEQUENCE NOTE: THE CONTRACTOR SHALL INSPECT AND PROVIDE NECESSARY MAINTENANCE ON ALL SEDIMENT AND EROSION CONTROL STRUCTURES SHOWN HEREON AFTER TRAPS WHEN CLEAN OUT ELEVATIONS ARE REACHED. ALL SEDIMENTS MUST BE PLACED UPSTREAM OF ANY APPROVED BASIN OR TRAP DEVICE.

TEMPORARY SEEDING NOTES

Apply to graded or cleared areas likely to be redisturbed where a short-term vegetative cover is needed. Seedbed Preparation: Loosen upper three inches of soil by raking, discing or other acceptable means before seeding, if not previously

Soil Amendments: Apply 600 lbs. per acre 10-10-10 fertilizer (14 lbs. per 1000 sq.ft.).

Seeding: For periods March 1 thru April 30 and from August 15 thru November 15, seed with 2-1/2 bushels per acre of annual rye (3.2 lbs per 1000 sa.ft.). For the period May 1 thru August 14, seed with 3 lbs. per acre of weeping lovegrass (0.07 lbs. per 1000 sq.ft.). For the period November 16 thru February 28, protect site by applying 2 tons per acre of well anchored straw mulch and seed as soon as possible in the spring, or use sod.

Mulching: Apply 1-1/2 to 2 tons per acre (70 to 90 lbs. per 1000 sq.ft.) of unrotted small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring too or 218 gal. per acre (5 gal. per 1000 sq.ft.) of emulsified asphalt on flat areas. On slopes, 8 ft. or higher, use 347 gal. per acre (8 gal. per 1000 sq.ft.) for anchoring.

Refer to the 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for rate and methods not covered.

PERMANENT SEEDING NOTES

Apply to graded or cleared areas not subject to immediate further disturbance where a permanent long-lived vegetative cover is needed. Seedbed Preparation: Loosen upper three inches of soil by raking, discing or other acceptable means before seeding, if not previously Soil Amendments : In lieu of soil test recommendations, use one of the following schedules :

1) Preferred - Apply 2 tons per acre dolomitic limestone (92 lbs. per 1000 sq.ft.) and 600 lbs. per acre 10-10-10 fertilizer (14 lbs. per 1000 sq.ft.) before seeding. Harrow or disc into upper three inches of soil. At time of seeding, apply 400 lbs per acre 30-0-0 ureaform fertilizer (9 lbs. per 1000 sq.ft.). 2) Acceptable - Apply 2 tons per acre dolomitic limestone (92 lbs. per 1000 sq.ft.) and 1000 lbs. per acre 10-10-10 fertilizer (23

lbs. per 1000 sq.ft.) before seeding. Harrow or disc into pper three inches of soil. eding : For the period March 1 thru April 30 and from August 1 hru October 15, seed with 60 lbs. per acre (1.4 lbs. per 1000 sa.ft.) with 60 lbs. Kentucky 31 Tall Fescue per acre and 2 lbs. per acre (0.05 lbs. per 1000 sq.ft.) of weeping lovegrass. During the period October 16 thru February 28, protect site by one of the following options

1) 2 tons per acre of well-anchored mulch straw and seed as soon as possible in the spring. Use sod. 3) Seed with 60 lbs. per acre Kentucky 31 Tall Fescue and mulch with 2 tons per acre well anchored straw. Mulching: Apply 1-1/2 to 2 tons per acre (70 to 90 lbs. per 1000

sq.ft.) of unrotted small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring too or 218 gal, per acre (5 gal, per 1000 sa.ft.) of emulsified asphalt on flat areas. On slopes, 8 ft. or higher, use 347 gal. per acre (8 gal. per 1000 sa.ft.) for anchoring. Maintenance: Inspect all seeded areas and make needed repairs.

HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME. AND THAT I AM DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 9757 EXPIRATION

DATE IS 2/28/10. TERRELL A. FISHER, PROFESSIONAL ENGINEER

ENGINEER'S CERTIFICATE

'I certify that this plan for erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District."

DEVELOPER'S CERTIFICATE I/We certify that all development and construction will be done according to this plan, for sediment and erosion control and that any responsible personnel involved in the will have a Certificate of Attendance at a Department of the ved Training Program for the Control of Sediment and Erosion before uthorize periodic on-site inspection by the Howard Soi

STANDARDS AND SPECIFICATIONS FOR TOPSOIL

Placement of topsoil over a prepared subsoil prior to establishment of permanent vegetation.

To provide a suitable soil medium for vegetative growth. Soils of concern have low moisture content, low nutrient levels, low pH, materials toxic to plants, and/or unacceptable soil gradation. Conditions Where Practice Applies

This practice is limited to areas having 2:1 or flatter slopes where a. The texture of the exposed subsoil/parent material is not adequate to produce vegetative growth. b. The soil material is so shallow that the rooting zone is not deep enough to support plants or

furnish continuing supplies of moisture and plant nutrients. c. The original soil to be vegetated contains material toxic to plant growth. d. The soil is so acidic that treatment with limestone is not feasible.

For the purpose of these Standards and Specifications, areas having slopes steeper than 2:1 require special consideration and design for adequate stabilization. Areas having slopes steeper than 2:1 shall have the appropriate stabilization shown on the plans. Construction and Material Specification

Topsoil salvaged from the existing site may be used provided that it meets the standards as set forth in these specifications. Typically, the depth of topsoil to be salvaged for a given soil type can be found in the representative soil profile section in the Soil Survey published by USDA-SCS in cooperation with Maryland Agricultural Experimental Station. Topsoil Specifications - Soil to be used as topsoil must meet the following

i. Topsoil shall be a loam, sandy loam, clay loam, sitt loam, sandy clay loam, loamy sand. Other soils may be used it recommended by an agronomist or soil scientist and approved by the appropriate approval authority. Regardless, topsoil shall not be a mixture of contrasting textured subsoils and shall contain less than 5% by volume of circlers, stones, slag, coarse tragments, gravel, sticks, roots, trash, or other materials larger than 11/2° in diameter.

ii. Topsoil must be free of plants or plant parts such as bermuda griss, quackgrass, Johnsongrass, nutsedge, poison iv, thistle, or others as specified. iii. Where the subsoil is either highly acidic or composed of heavy clays, ground limestone shall be spread at the rate of 4-0 tons/acre (200-400 pounds per 1,000 square feet) prior to the placement of topsoil. Lime shall be distributed uniformly over designated areas and worked into the soil in conjunction with tillage operations as described in the following procedures. For sites having, disturbed areas under 5 acres:

i. Place topsoil (if required) and apply soil amendments as specified in 20.0 Vegetative Stabilization — Section I — Vegetative Stabilization Methods and Materials. For sites having disturbed areas over 5 acres:

i. On soil meeting Topsoil specifications, obtain test results dictating fertilizer and lime amendments required to bring the soil into compliance with the following: a. pH for topsoil shall be between 6.0 and 7.5. If the tested soil demonstrates a pH of less than 6.0, sufficient lime shall be perscribed to raise the pH to 6.5 or higher.

b. Organic content of topsoil shall be not less than 1.5 percent by weight c. Topsoil having soluble salt content greater than 500 parts per million shall not be used d. No sod or seed shall be placed on soil which has been treated with soil sterilants or chemicals used for weed control until sufficient time has elapsed (14 days min.) to permit dissipation of phyto-toxic materials.

Note: Topsoil substitutes or amendments, as recommended by a qualified agronomist or soil scientist and approved by the appropriate approval authority, may be used in lieu of natural topsoil. ii. Place topsoil (if required) and apply soil amendments as specified in 20.0 Vegetative Stabilization — Section 1 — Vegetative Stabilization Methods and Materials.

Topsoil Application i. When topsoiling, maintain needed erosion and sediment control practices such as diversions, Grade Stabilization Structures, Earth Dikes, Slope Silt Fence and Sediment Traps and Basins ii. Grades on the areas to be topsoiled, which have been previously established, shall be maintained, albeit 4" - 8" higher in elevation.

iii. Topsoil shall be uniformly distributed in a 4" - 8" layer and lightly compacted to a minimum thickness of 4°. Spreading shall be performed in such a manner that sodding or seedine can proceed with a minimum of additional soil preparation and tillage. Any irregularities in the surface resulting from topsoiling or other operations shall be corrected in order to prevent the formation of depressions or water pockets.

iv. Topsoil shall not be placed while the topsoil or subsoil is in a frozen or muddy condition, when the subsoil is excessively wet or in a condition that may otherwise be detrimental to proper grading and seedbed preparation. Alternative for Permanent Seeding - Instead of applying the full amounts of lime and commercial fertilizer, composted sludge and amendments may be applied as specified below:

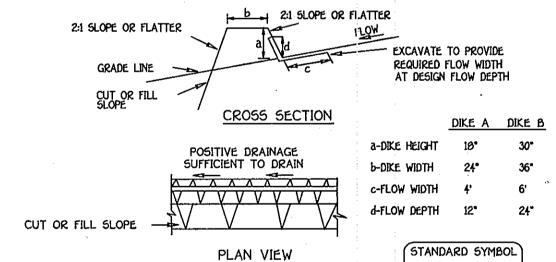
i. Composted Sludge Material for use as a soil conditioner for sites having disturbed areas over 5 acres shall be tested to prescribe amendments and for sites having disturbed areas under 5 acres shall conform to the following requirements:

a. Composted sludge shall be supplied by, or originate from, a person or persons that are permitted (at the time of acquisition of the compost) by the Maryland Department of the Environment under COMAR 25.04.06.

b. Composted sludge shall contain at least 1 percent nitrogen, 1.5 percent phosphorus, and 0.2 percent potassium and have a Ph of 7.0 to 0.0. If compost does not meet these requirements, the appropriate constituents must be added to meet the requirements prior to use.

c. Composted sludge shall be applied at a rate of 1 ton/1,000 square feet.

iv. Composted sludge shall be amended with a potassium fertilizer applied at the rate of 4 lb/1,000 square feet, and 1/3 the normal time application rate. References: Guideline Specifications, Soil Preparation and Sodding, MD-VA, Pub. #1, Cooperative Extension Service. University of Maryland and Virginia Polytechnic Institutes. Revised 1973.



FLOW CHANNEL STABILIZATION --- — /---- — GRADE 0.5% MIN. 10% MAX. 1. Seed and cover with straw mulch. 2. Seed and cover with Erosion Control Matting or line with sod. 3. 4" - 7" stone or recycled concrete equivalent pressed into

the soil 7" minimum Construction Specifications

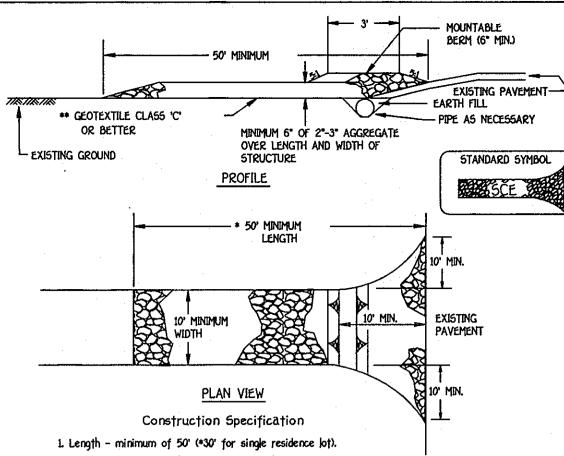
1. All temporary earth dikes shall have uninterrupted positive grade to an outlet. Spot elevations may be necessary for grades less than 1%. 2. Runoff diverted from a disturbed area shall be conveyed to a sediment trapping device.

3. Runoff diverted from an undisturbed area shall outlet directly into an undisturbed, stabilized area at a non-erosive velocity 4. All trees, brush, stumps, obstructions, and other objectionable material shall be removed and disposed of so as not to interfere with the proper functioning of the dike.

5. The dike shall be excavated or shaped to line, grade and cross section as required to meet the criteria specified herein and be free of bank projections or other irregularities which will impede 6. Fill shall be compacted by earth moving equipment.

7. All earth removed and not needed for construction shall be placed so that it will not interfere with the functioning of the dike. 8. Inspection and maintenance must be provided periodically and after each rain event.

EARTH DIKE NOT TO SCALE



2. Width - 10' minimum, should be flared at the existing road to provide a turning

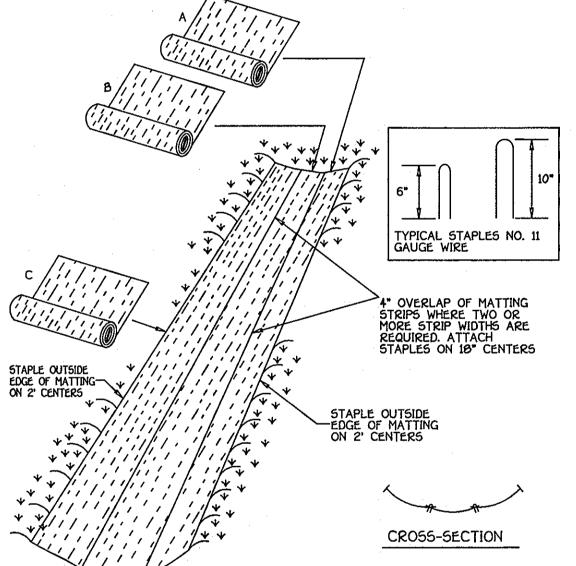
3. Geotextile fabric (filter cloth) shall be placed over the existing ground prior to placing stone. **The plan approval authority may not require single family residences to use geotextile.

4. Stone - crushed aggregate (2" to 3") or reclaimed or recycled concrete equivalent shall be placed at least 6" deep over the length and width of the

5. Surface Water - all surface water flowing to or diverted toward construction entrances shall be piped through the entrance, maintaining positive drainage. Pipe installed through the stabilized construction entrance shall be protected with a mountable berm with 5:1 slopes and a minimum of 6° of stone over the pipe. Pipe has to be sized according to the drainage. When the SCE is located at a high spot and has no drainage to convey a pipe will not be necessary. Pipe should be sized according to the amount of runoff to be conveyed. A 6" minimum will be required

Location - A stabilized construction entrance shall be located at every point where construction traffic enters or leaves a construction site. Vehicles leaving the site must travel over the entire length of the stabilized construction entrance.

STABILIZED CONSTRUCTION ENTRANCE NOT TO SCALE



Construction Specifications

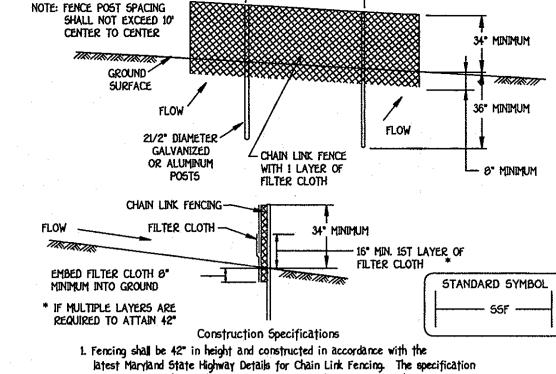
1. Key-in the matting by placing the top ends of the matting in a narrow trench, 6" in depth. Backfill the trench and tamp firmly to conform to the channel cross-section. Secure with a row of staples about 4" down slope from the trench. Spacing between staples is 6". 2. Staple the 4" overlap in the channel center using an 18" spacing

between staples 3. Before stapling the outer edges of the matting, make sure the matting is smooth and in firm contact with the soil.

4. Staples shall be placed 2' apart with 4 rows for each strip, 2 outer rows, and 2 alternating rows down the center. 5. Where one roll of matting ends and another begins, the end of the top strip shall overlap the upper end of the lower strip by 4", shiplap fashion. Reinforce the overlap with a double row of staples

spaced 6" apart in a staggered pattern on either side. 6. The discharge end of the matting liner should be similarly secured with 2 double rows of stables. Note: If flow will enter from the edge of the matting then the area effected by the flow must be keyed-in.

> EROSION CONTROL MATTING NOT TO SCALE



10' MAXIMUM

for a 6' fence shall be used, substituting 42" fabric and 6' length posts. 2. Chain link fence shall be fastened securely to the fence posts with wire ties.

The lower tension wire, brace and truss rods, drive anchors and post caps are not required except on the ends of the fence. 3. Filter cloth shall be fastened securely to the chain link fence with ties spaced

every 24" at the too and mid section. 4. Filter cloth shall be embedded a minimum of 8° into the ground. 5. When two sections of filter cloth adjoin each other, they shall be overlapped

by 6" and folded. 6. Maintenance shall be performed as needed and silt buildups removed when "bulges" develop in the silt fence, or when silt reaches 50% of fence height 7. Filter cloth shall be fastened securely to each fence post with wire ties or

> Geotextile Class F: Tensile Strenath Test: MSMT 509 50 hs/in (min.) Tensile Modulus 20 lbs/in (min.) Test: MSMT 509 0.3 gal/ft /minute (max.) 2 Test: MSMT 322 Flow Rate Filtering Efficiency 75% (min.) Test: MSMT 322

> staples at top and mid section and shall meet the following requirements for

Silt Fence Length (maximum) 0 - 10% 0 - 10:1 Unlimited 10 - 20% 10:1 - 5:1 1,500 feet 200 feet 20 - 33**X** 5:1 - 3:1 100 feet 1,000 feet 33 - 50% 3:1 - 2:1 500 feet 100 feet 50% + 2:1 + 50 feet 250 feet

NOT TO SCALE

-16° MINIMUM HEIGHT OF

GEOTEXTILE CLASS F

- B" MINIMUM DEPTH IN

FENCE POST SECTION

UNDISTURBED

GROUND

THE TREATMENT OF THE TIME THE STATE OF THE S

- FENCE POST DRIVEN

MINIMUM OF 16" INTO

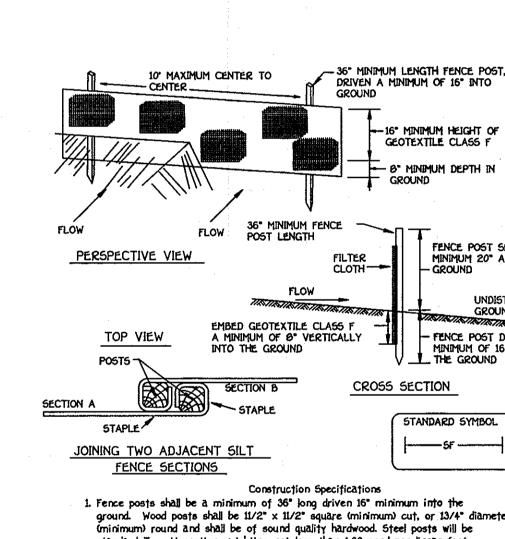
THE GROUND

STANDARD SYMBOL

5F -----

MINIMUM 20" ABOVE

GROUND



1. Fence posts shall be a minimum of 36" long driven 16" minimum into the ground. Wood posts shall be 11/2" x 11/2" square (minimum) cut, or 13/4" diameter minimum) round and shall be of sound quality hardwood. Steel posts will be standard T or U section weighting not less than 1.00 pond per linear foot. 2. Geotextile shall be fastened securely to each fence post with wire ties

or staples at top and mid-section and shall meet the following requirements for Geotextile Class F: Tensile Strength 50 lbs/in (min.) Test: MSMT 509 20 lbs/in (min.) Test: MSMT 509 Flow Rate 0.3 gal ft / minute (max.)* Test: MSMT 322 Filterina Efficiency Test: MSMT 322 3. Where ends of geotextile fabric come together, they shall be overlapped, folded and stapled to prevent sediment bypass.

4. Silt Fence shall be inspected after each rainfall event and maintained when bulges occur or when sediment accumulation reached 50% of the fabric height. Silt Fence Design Criteria Sift Fence Length Slope Steepness Slope Length

unlimited unlimited Flatter than 50:1 1.000 feet 50:1 to 10:1 125 feet 0:1 to 5:1 750 feet 5:1 to 3:1 60 feet 500 feet 3:1 to 2:1 40 feet 250 feet 2:1 and steeper 20 feet Note: In areas of less than 2% slope and sandy soils (USDA general classification

> SILT FENCE NOT TO SCALE

system, soil Class A) maximum slope length and silt fence length will be

unlimited. In these areas a silt fence may be the only perimeter control

PPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING approved for soil erosion and sediment control by BUILDE'RS NV HOMES RYAN HOMES - Department of Planning and Zoning 6085 MARSHALEE DRIVE 6085 MARSHALEE DRIVE **SUITE 130** SUITE 140 ELKRIDGE, MD. 21075 ELKRIDGE, MD. 21075

121/10 22407 10156班111 GTW'S WAVERLY WOODS LOTS 40 THEN 4 BLOCK NO. ZONE TAX/ZONE | ELEC. DIST. CENSUS TR. 20933 THIRD 3 & 4 P5C 20942 60300 WATER CODE

SEDIMENT/EROSION CONTROL NOTES & DETAILS

AGE RESTRICTED ADULT HOUSING GTW'S WAVERLY WOODS

SECTION 14 BULK PARCEL 'C' PLAT No. "THE COURTYARDS AT WAVERLY WOODS - WEST" PHASE I - LOTS 6 THRU 11 & 40 THRU 43

ZONING: PSC TAX MAP NO.: 16 GRID NO.: 3 & 4 PARCEL NO.: 120, 221 & 249 THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND SCALE: AS SHOWN DATE: JUNE 4, 2010 SHEET 6 OF 17

5DP-09-03T

(410) 461 - 2855

FISHER, COLLINS & CARTER, INC.

IVIL ENGINEERING CONSULTANTS & LAND SURVEYORS

OF MARI



Signature of Engineer

TERRELL A. FISHER. P.E.

410-379-5956 DEVELOPER

VAVERLY WOODS DEVELOPMENT CORPORATION WAVERLY WOODS DEVELOPMENT CORPORATION. C/O LAND DESIGN AND DEVELOPMENT, INC. 5300 DORSEY HALL DRIVE, SUITE 102 ELLICOTT CITY, MARYLAND 21042 443-367-0422 (443-367-0422)

410-379-5956

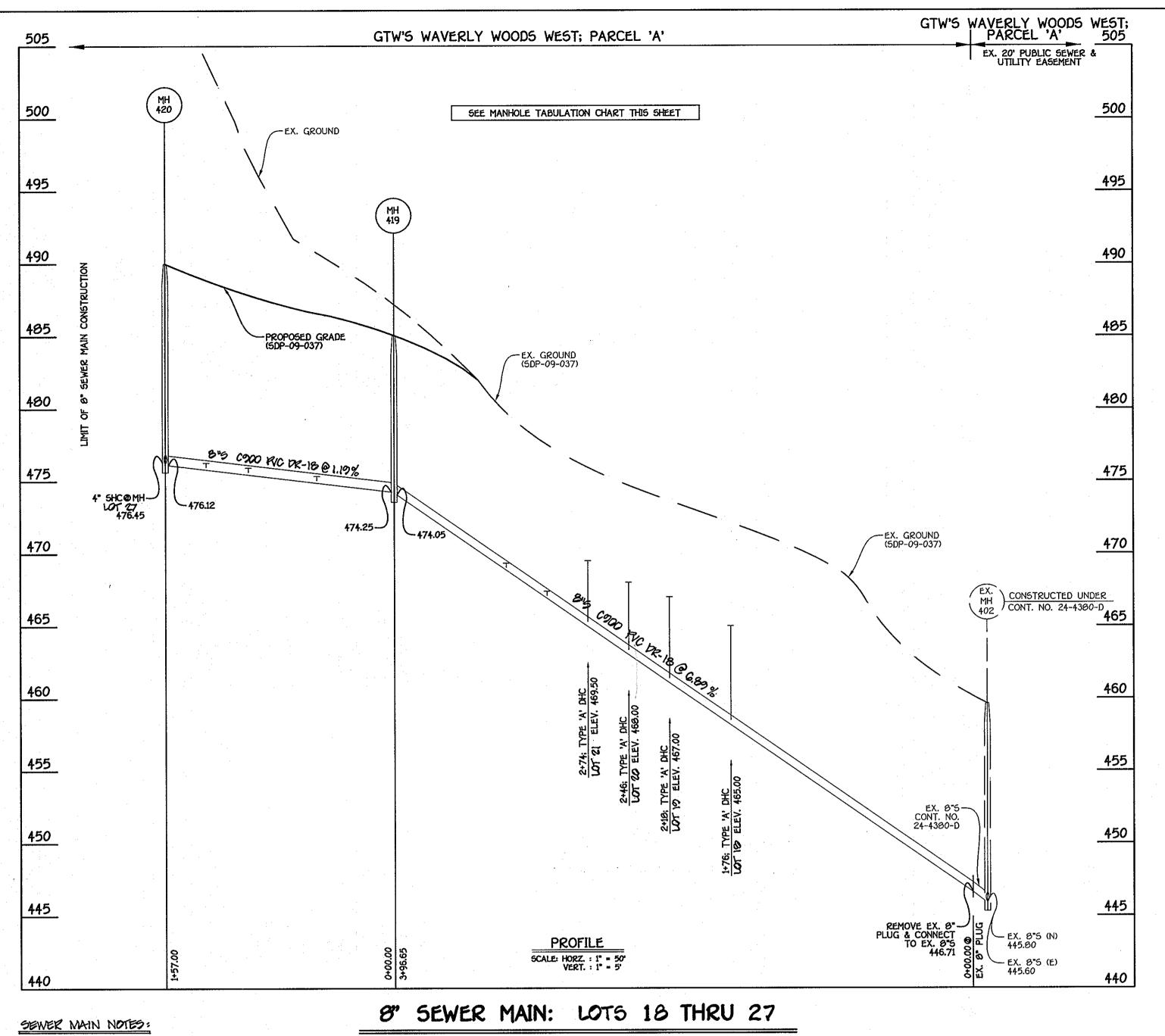
C/O LAND DESIGN AND DEVELOPMENT, INC. 5300 DORSEY HALL DRIVE, SUITE 102 ELLICOTT CITY, MARYLAND 21042

OWNERS

A-2 B-3

SEWER CODE 5992000

1 PIO RECORDED LOTS AND REVISE EASEMENT 11/18/10 K-02 DATE



GTW'S WAVERLY WOODS WEST; PARCEL 'A' EX. 20' PUBLIC SEWER & UTILITY EASEMENT SEE MANHOLE TABULATION CHART THIS SHEET 495 495 490 --PROPOSED GRADE (SDP-09-037) 490 485 485 MH 413 480 480 --PROPOSED GRADE (SDP-09-037) 845 COOD RIC DR-18 @ 3.30 % -EX. GROUND 475 471.87-471.67 465 EX. GROUND 1 0000 RVC 460 - 458.70 450 SEE SHEET Ø FOR CONTINUATION OF Ø*5 REMOVE EX. 8°— PLUG & CONNECT TO EX. 8'5 450.73 PROFILE SCALE: HORZ. : 1" = 50" VERT. : 1" = 5" 440 SEE SEWER MAIN NOTES THIS SHEET

8" SEWER MAIN: LOTS 5 THRU 17

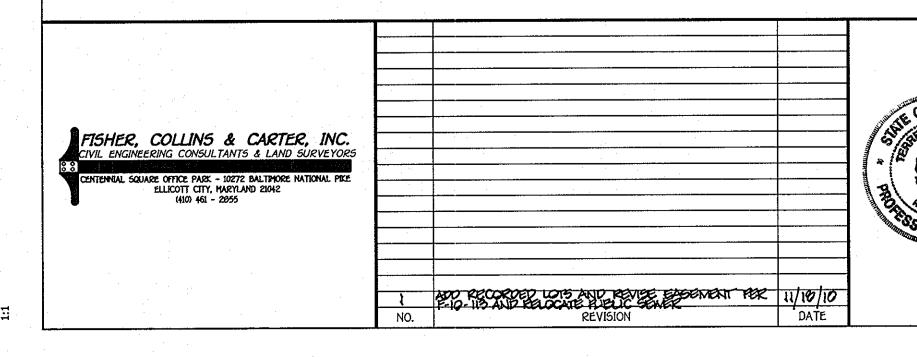
SHC INV	ERT @ 10' FROM	BUILDING
STATION	LOT	ELEVATION
	MH 412 TO MH 413	
0+18 LT.	5	458.47
	MH 413 TO MH 414	
0+25 LT.	6	460.42
0+35 LT.	7	460.92
0+63 LT.	8	462.32
0+91 LT.	9	463.72
1+42 LT.	10	466.27
1+98 LT.	11	469.37
·.	MH 414 TO MH 415	
0+31 LT.	12	473.16
0+41 LT.	13	473.49
0+67 LT.	14	474.35
0+95 LT.	15	475.20
1+23 LT.	16	476.20
Ø MH 415 LT.	17	477.30

1. ALL SEWER MAINS SHALL BE AWWA COOD RVC DR-18 PIPE 2. ALL MPE BEDANY SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY DEGICN MANUAL, VOLUME II WATER AND GEWER STANDARDS FOR AWAY COOD PUC SEWER PIPE INSTALLATION,

SHC INV	ERT @ 10' FROM	BUILDING
STATION	LOT	ELEVATION
	EX. MH 402 TO MH 419	
1+76 RT.	16 (DHC)	465.20
2+18 RT.	19 (DHC)	467.20
2+46 RT.	ZO (DHC)	468.20
2+74 RT.	21 (DHC)	469.70
3+02 RT.	22	467.10
3+30 RT.	23	469.11
	MH 419 TO MH 420	
0+53 RT.	24	475.45
1+00 RT.	25	476.01
1+29 RT.	26	476.36
Ø MH 420 RT.	27	476.05

MA	NHOLE TABU	LATION CHA	NRT
NO.	NORTHING	EASTING	RIM ELEVATION
412	598289.44	1340339.05	470.00
413	590231.22	1340312.57	472.00
414	590014.03	1340176.06	484.00
415	597071.07	1340125.47	499.00
419	597635.50	1340076.60	495.00
420	597749.13	1339960.26	490.00

NOTE: SET MH RIMS FLUSH W/PROPOSED GRADE.



HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 9757 EXPIRATION DATE IS 2/28/10.

BUILDERS NV HOMES 6005 MARSHALEE DRIVE 6005 MARSHALEE DRIVE SUITE 130 SUITE 140 ELKRIDGE, MD. 21075 ELKRIDGE, MD. 21075 ' 410-379-5956

OWNERS DEVELOPER WAVERLY WOODS DEVELOPMENT CORPORATION WAVERLY WOODS DEVELOPMENT CORPORATION C/O LAND DESIGN AND DEVELOPMENT, INC. C/O LAND DESIGN AND DEVELOPMENT, INC. 5300 DORSEY HALL DRIVE, SUITE 102 5300 DORSEY HALL DRIVE, SUITE 102 ELLICOTT CITY, MARYLAND 21042 ELLICOTT CITY, MARYLAND 21042 443-367-0422

le	HOWARD COUNT	mlı	ENT OF	PLANN	ING AND Z	MINO.	Zilio Date
me	opment Engineer Department of	L Dec	tle.	. (<u> </u>		Date Date
PROJECT GTW'5 WAV	ERLY WOODS		SE	CTION	14		NOS. 15 6 THOU 11 & 15 40 THOU 43
PLAT .	BLOCK NO.	ZONE	TAX/Z	ONE	ELEC. DI	5T.	CENSUS TR.
20933- 20942	3 & 4	P5C	16	•	THIRD)	60300
WATER CO	DE		SEWER	COD	E		
K-02	V.		59920	00			

PRIVATE SEWER MAIN PROFILES

AGE RESTRICTED ADULT HOUSING GTW'S WAVERLY WOODS

SECTION 14

BULK PARCEL 'C' PLAT NO.

"THE COURTYARDS AT WAVERLY WOODS - WEST"

PHASE ONE - WOTS G THRU 11 & 40 THRU 43 TOWNHOUSE CONDOMINIUMS & SINGLE FAMILY HOMES

ZONING: P5C
TAX MAP NO.: 16 GRID NO.: 3 & 4 PARCEL NO.: 120, 221 & 249
THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: JUNE 4, 2010
SHEET 7 OF 17

8" SEWER MAIN: TO LOTS 28 THRU 43

SEWER MAIN NOTES: 1. ALL SEWER MAINS SHALL BE AWWA 0900 RVC DR-18 PIPE 2. ALL PIPE BEDOING SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL, VOLUME II WATER AND SEWER STANDARDS FOR AWWA 0900 RVC SEWER PIPE INSTALLATION.

SHC INV	ERT @ 10' FROM	BUILDING
STATION	LOT	ELEVATION
	MH 416 TO MH 417	
0+27 RT.	43	463.94
0+34 RT.	47	464.10
0+90 RT.	41	465.54
1+06 RT.	40	465.72
1+82 RT.	39	467.43
2+13 RT.	38	468.12
2+41 RT.	37	460.75
2+69 RT.	36	469.38
2+75 RT.	35	469.52
	MH 417 TO MH 410	
0+52 RT.	34	473.50
0+61 RT.	33	474.03
0+88 RT.	32	475.60
1+16 RT.	31	477.23
1+45 RT.	30	476.92
1+72 RT.	(2)	400.50
Ø MH 410 RT.	28	402.29

MA	NHOLE TABUI	LATION CHA	RT
NO.	NORTHING	EASTING	RIM ELEVATION
416	590312.20	1340288.83	470.25
417	598050.28	1340126.46	403.00
418	597062.71	1340057.04	490.00

LOT	M.C.E.	
5	463.01	
6	464.72	
7	465.18	
8	466.62	
ク	467.98	
10	470.69	
11	473.79	
12	477.50	
19	4 77.75	
14	470.73	
15	479.60	
16	480.58	
17	401.62	
187	470.06	
10	472.02	
20	473.02	
21	474.52	
22	472.00	
23	473.93	
24	480.25	
25	480.81	
26	481.16	
77	401.65	
w	482.29	
29	400.50	
30	478.92	
21	477.23	
32	475.60	
33	474.03	
34	473.50	
35	469.52	
36	469.30	
37	460.75	
36	460.12	
39	467.43	
40	465.72	
41	465.54	
47	464.10	
43	463.94	

M.C.E. CHART

FISHER, COLLINS & CARTER, INC. CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE ELLICOTT CITY, MARYLAND 21042 (410) 461 - 2055				
	NO.	PETO TIS AND RESCRIPTION PER PRINTING PER PR	11/16/10 DATE	



I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 9757 EXPIRATION DATE IS 2/28/10.

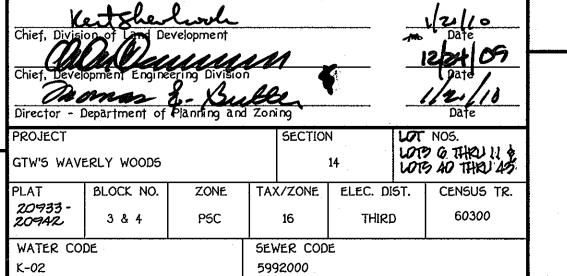
BUILDERS NV HOMES
6005 MARSHALEE DRIVE
SUITE 130
ELKRIDGE, MD. 21075
410-379-5956

RYAN HOMES
6005 MARSHALEE DRIVE
SUITE 140
ELKRIDGE, MD. 21075
410-379-5956

410-379-5956

NOTE: SET MH RIMS FLUSH W/PROPOSED GRADE.

DEVELOPER	OWNERS
WAVERLY WOODS DEVELOPMENT CORPORATION C/O LAND DESIGN AND DEVELOPMENT, INC. 5300 DORSEY HALL DRIVE, SUITE 102 ELLICOTT CITY, MARYLAND 21042 443-367-0422	WAVERLY WOODS DEVELOPMENT CORPORATION C/O LAND DESIGN AND DEVELOPMENT, INC. 5300 DORSEY HALL DRIVE, SUITE 102 ELLICOTT CITY, MARYLAND 21042 (443-367-0422)



PRIVATE SEWER MAIN PROFILES

AGE RESTRICTED ADULT HOUSING

GTW'S WAVERLY WOODS

SECTION 14

BULK PARCEL 'C' PLAT No.

"THE COURTYARDS AT WAVERLY WOODS - WEST"

PHASE ONE - LOTS G THRU 11 & 40 THRU 43 TOWNHOUSE CONDOMINIUMS & SINGLE FAMILY HOMES

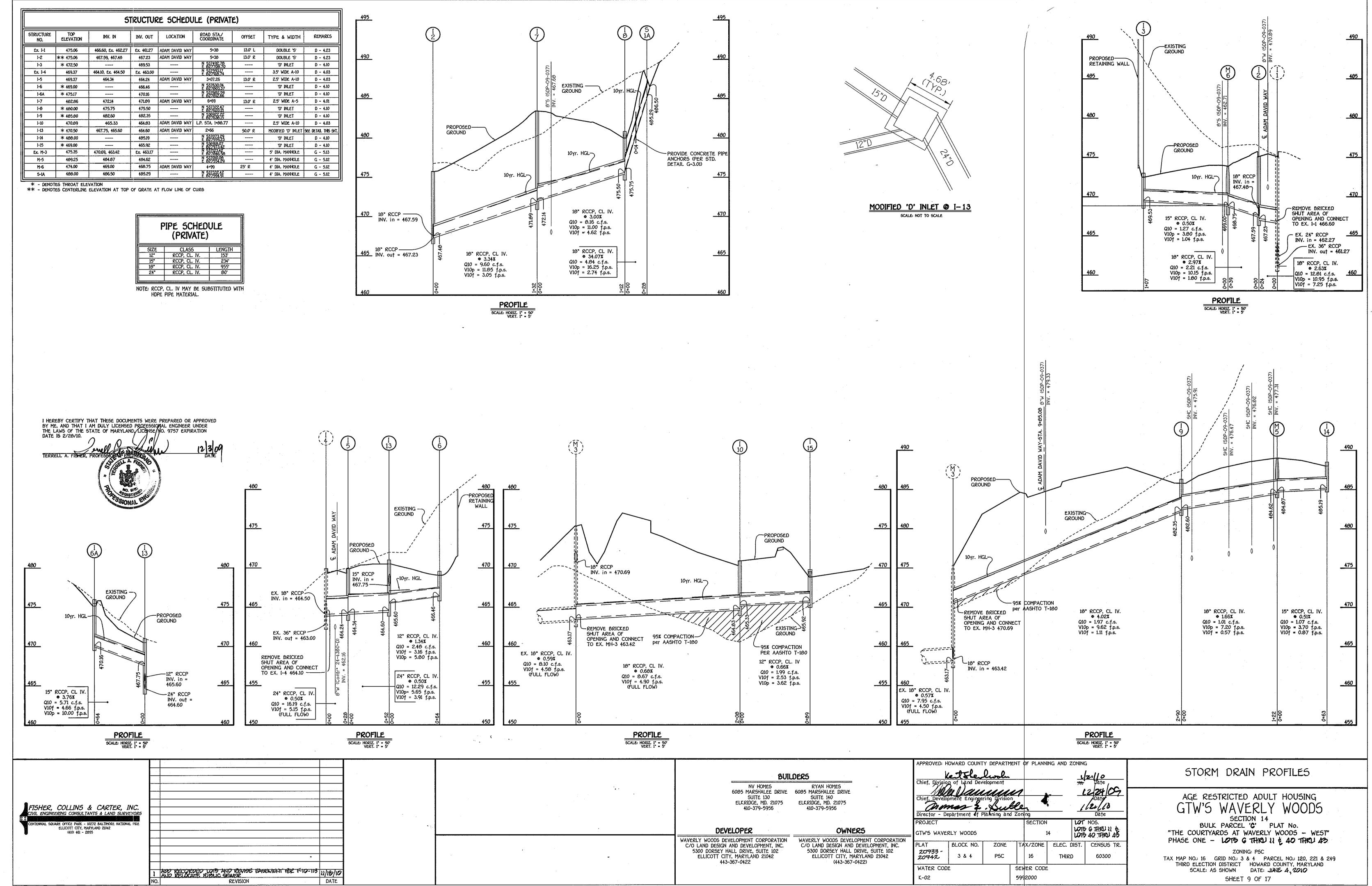
ZONING: PSC

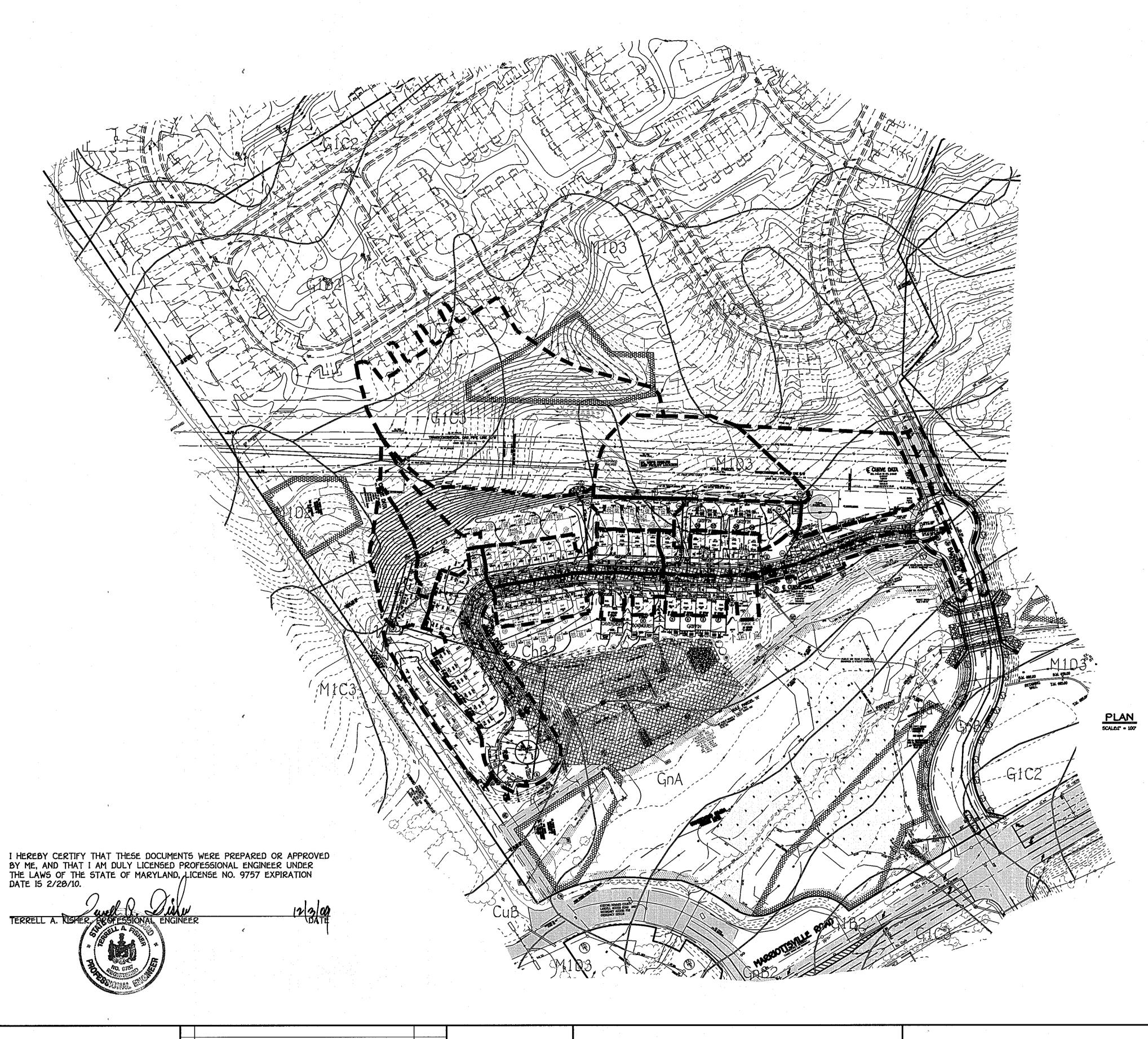
TAX MAP NO.: 16 GRID NO.: 3 & 4 PARCEL NO.: 120, 221 & 249

THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND

SCALE: AS SHOWN DATE: JUNE 4, 2010

SHEET 8 OF 17





DATE

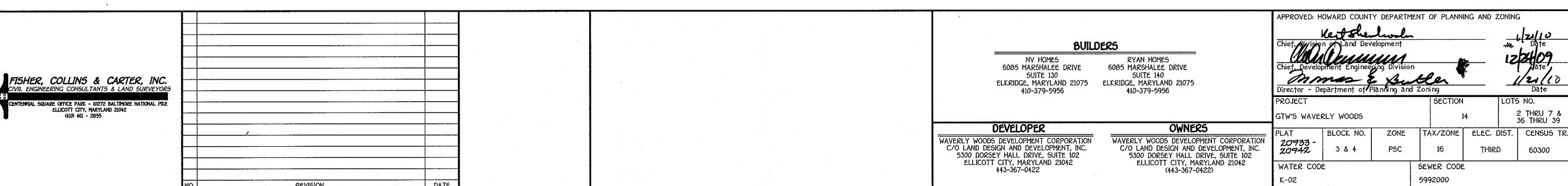
REVISION

SOIL CLASSIFICATION				
Soil Sym.	501 Sym. Name HYDROLOGIC GROUP			
* Ba	Baile silt loam	D		
BrB2	Beltsville silt loam	С		
BrC2	Beltsville silt loam	С		
BrC3	Beltsville silt loam	С		
BrD2	Beltsville silt loam	С		
Brf	Brandywine loam	С		
ChA	Chester silt loam	В		
Ch82	Chester silt loam	ß		
ChC2	Chester silt loam	β		
ChC3	Chester silt loam	B		
CgC2	Chester silt loam	В		
** Co	Codorus silt loam	С		
** Cuß	Comus silt loam	ß		
** DeA	Delanco silt koam	С		
** De82	Delanco silt loam	С		
EkB2	Elioak silt loam	ß		
EIC3	Elloak silty clay loam	ß		
EID3	Elioak silty clay loam	ß		
En82	Elsinboro loam	В		
EnC2	Elsinboro loam	В		
GIA	Glenelo loam	В		
GIB2	Glenelg loam	В		
GIC2	Glenelg loam	β		
GIC3	Glenela loam	B		
G1D2	Glenelo loam	β		
GID3	Glenelg loam	β		
** GnA	Glenville silt loam	С		
** Gn82	Glenville silt loam	С		
* Ha	Hatboro silt loam	D		
* Kn	Kinkora silt loam	Ω		
Mg82	Manor gravelly loam	В		
MgC2	Manor gravelly loam	B		
M1A	Manor Joann	ß		
M182	Manor loam	ß		
M1C2	Manor Joann	ß		
M1C3	Manor Joann	В		
M1D2	Manor Joann	ß		
M1D3	Manor Joann	В		
MIE	Manor Joann	ß		
	* HANGE COLLE			

*	HYDRI	C SOILS			
**	501L5	SUBJECT	TO	HYDRIC	CONDITIONS

DRAINAGE AREA DATA			
STRUCTURE NO.	AREA (AC.)	,C,	% IMP.
EX. I-1	0.51	0.61	52
I-2	0.23	0.92	95
1-3	0.21	0.78	75
EX. I-4	0.49	0.87	89
I-5	0.70	0.78	75
I-6	0.36	0.71	65
I-6A	1.08	0.71	65
I-7	0.30	0.81	80
I-8	0.63	0.71	65
[-9	0.39	0.71	65
I-10	1.14	0.83	83
I-13	0.90	0.71	65
I-14	0.47	0.31	8
I-15	0.45	0.45	29
I-16	1.68	0.27	2 .
5-1A	2.73	0.24	. 0
EX. I-12	0.25	0.90	9 3
Ex. I-11	0.10	0.90	93

	· · · · · · · · · · · · · · · · · · ·
	LEGEND
SYMBOL	DESCRIPTION
	EXISTING CONTOUR 2' INTERVAL
	PROPOSED CONTOUR 2' INTERVAL
×362.2	SPOT ELEVATION
□WOB>	WALKOUT BASEMENT
—SF —SF—	SILT FENCE
-55F55F-	SUPER SILT FENCE
ECM	EROSION CONTROL MATTING
LOD	LIMIT OF DISTURBANCE
\$	STREET LIGHT PER F-09-057
	UNMITIGATED 65dBA NOISE LINE
1 <u>0* 50</u>	PROPOSED STORM DRAIN PIPE
8*5	PROPOSED SEWER
	15% to 24.9% Slope
Secretary of the secret	PROPOSED LANDSCAPING PER F-09-057
	EXISTING TREES PER F-09-057
	REVERSE GUTTER PAN SLOPE
— 55F/TP <i>—</i>	EXISTING COMBINATION SUPER SILT FENCE AND TREE PROTECTION PROVIDED BY F-09-057
– 55F –	EXISTING SUPER SILT FENCE PROVIDED BY F-09-057
	FOREST CONSERVATION
	FOREST CONSERVATION PLANTING
	PRIVATE STORMWATER MANAGEMENT, ACCESS, DRAINAGE & UTILITY EASEMENT PLAT NO. 20939
द अवेद अवेद	WETLANDS



DRAINAGE AREA MAP/50ILS MAP AGE RESTRICTED ADULT HOUSING GTW'S WAVERLY WOODS SECTION 14

BULK PARCEL 'A' PLAT No.

"THE COURTYARDS AT WAVERLY WOODS — WEST"

PHASE I — UNITS 2 THRU 7 & 36 THRU 39

2 THRU 7 & 36 THRU 39

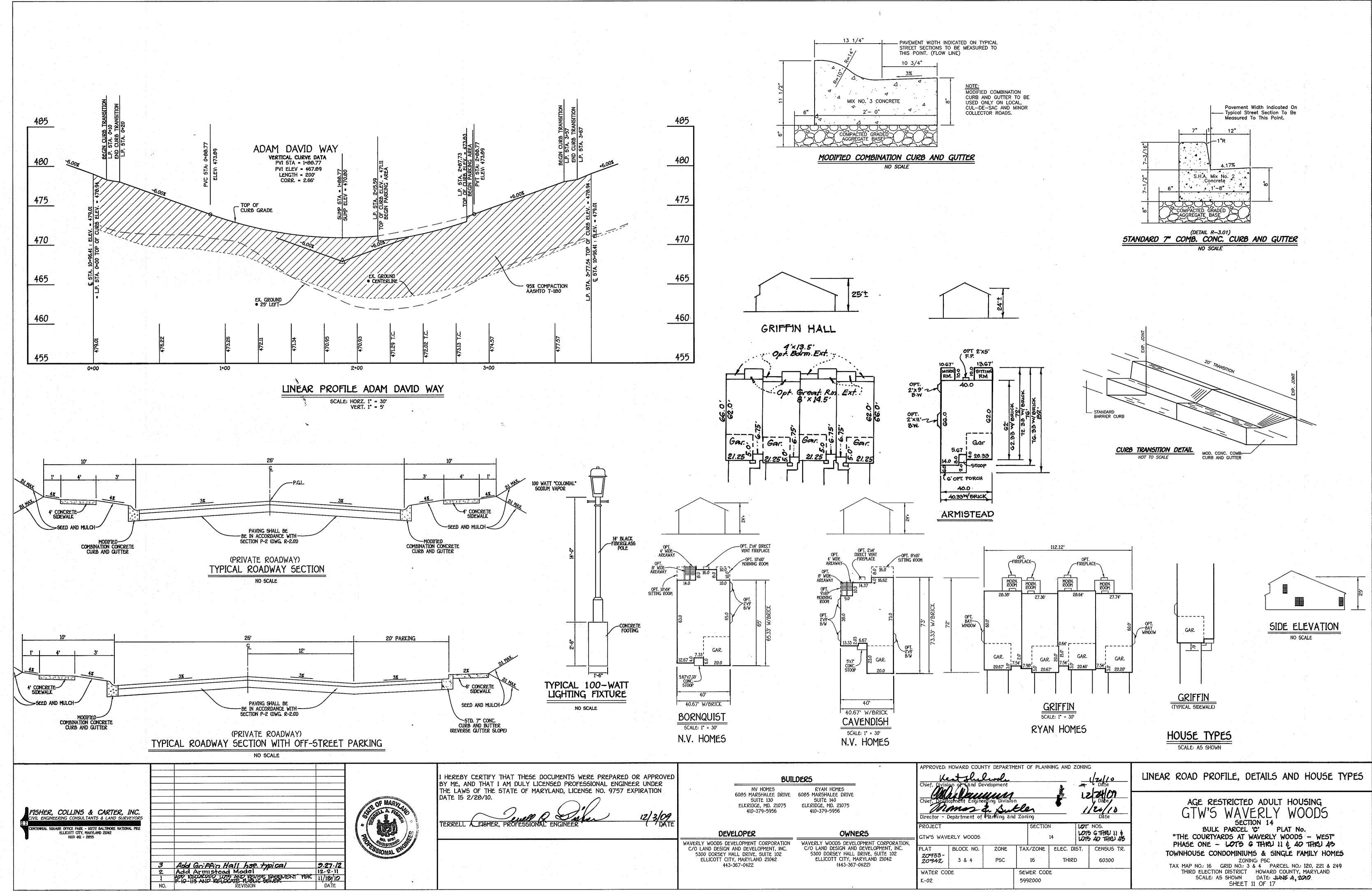
60300

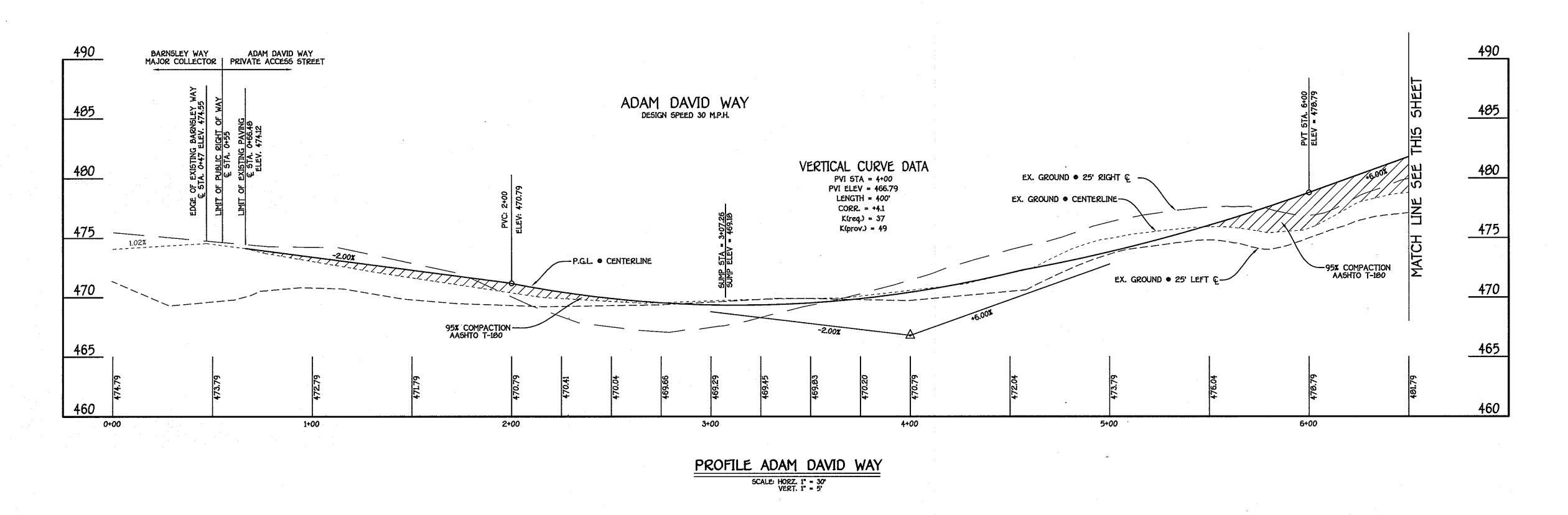
ZONING: PSC

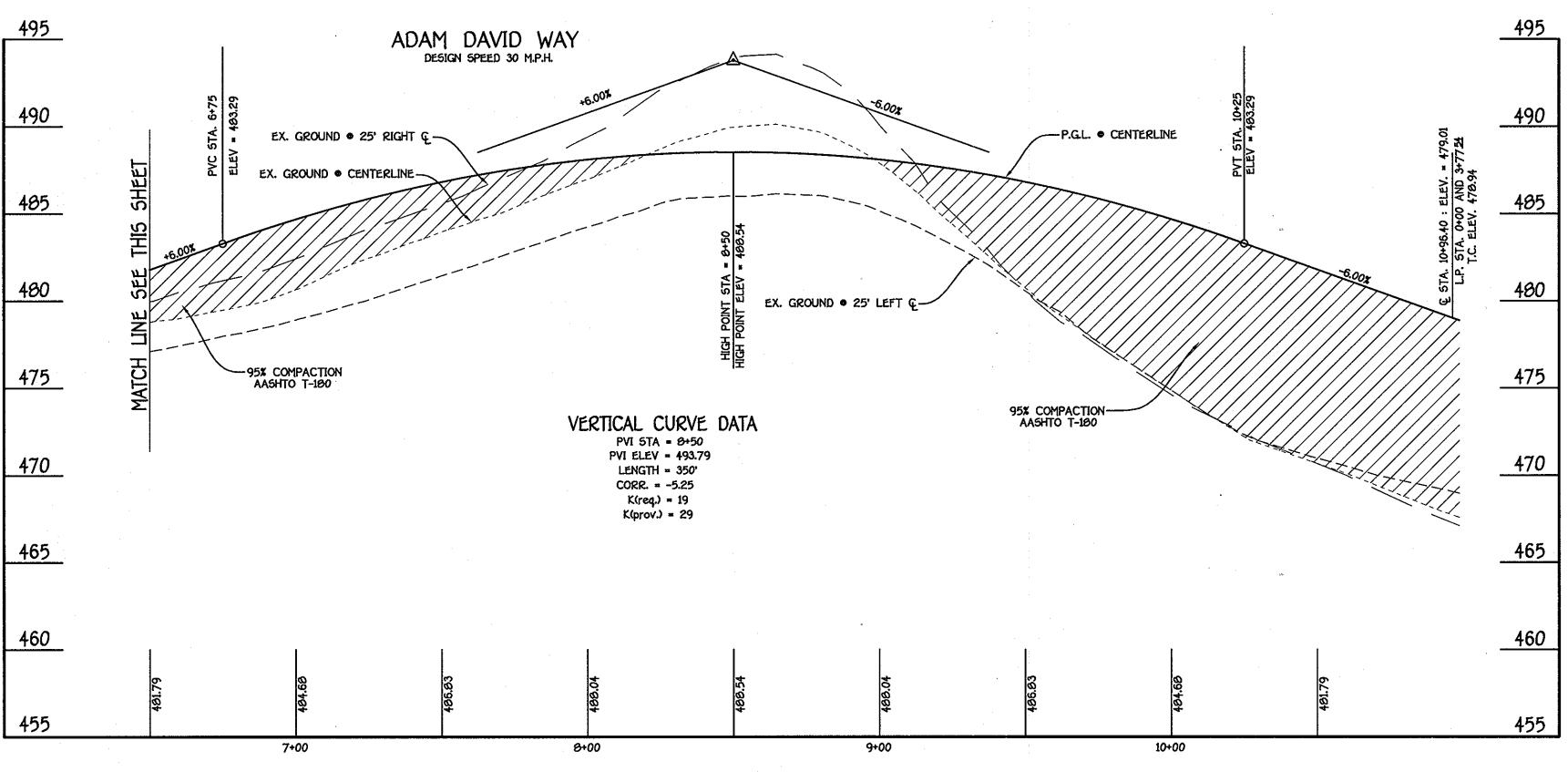
TAX MAP NO.: 16 GRID NO.: 3 & 4 PARCEL NO.: 120, 221 & 249

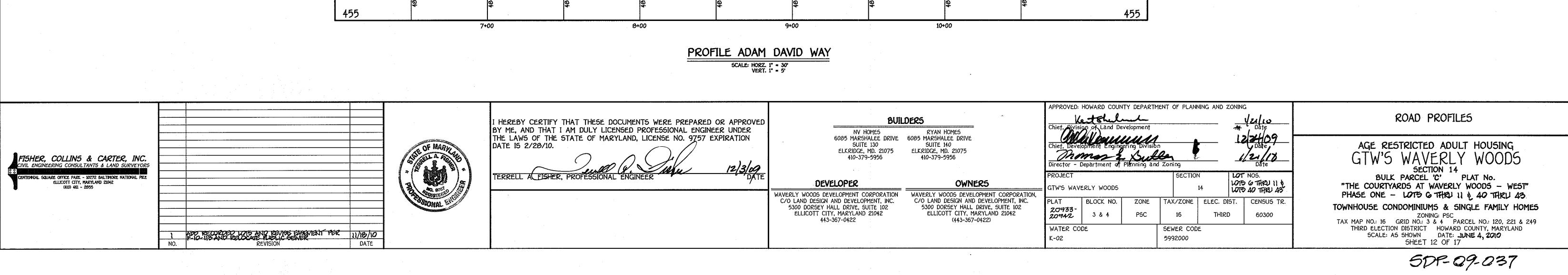
THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND

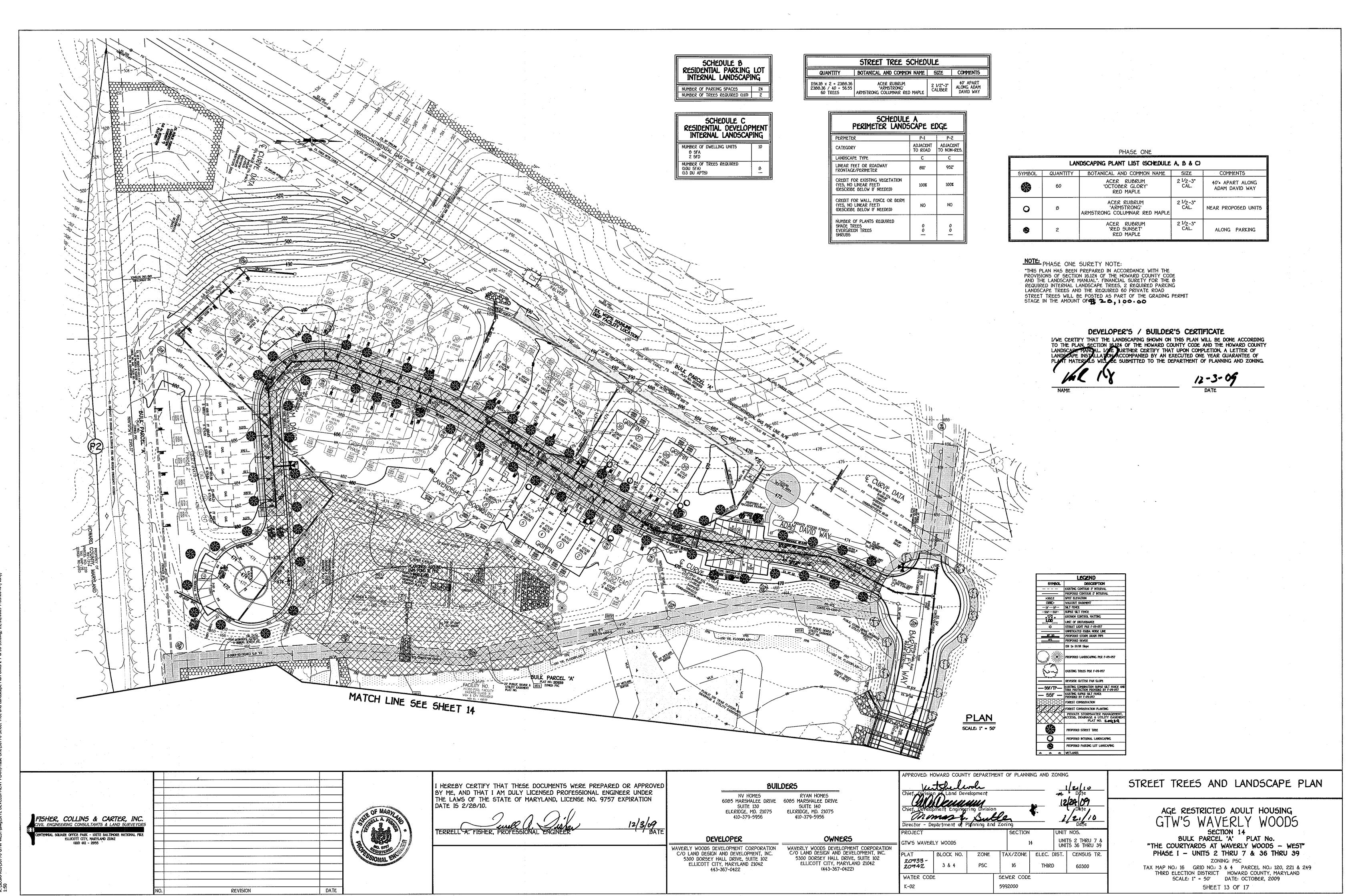
SCALE: 1" = 100' DATE: OCTOBER, 2009 SHEET 10 OF 17

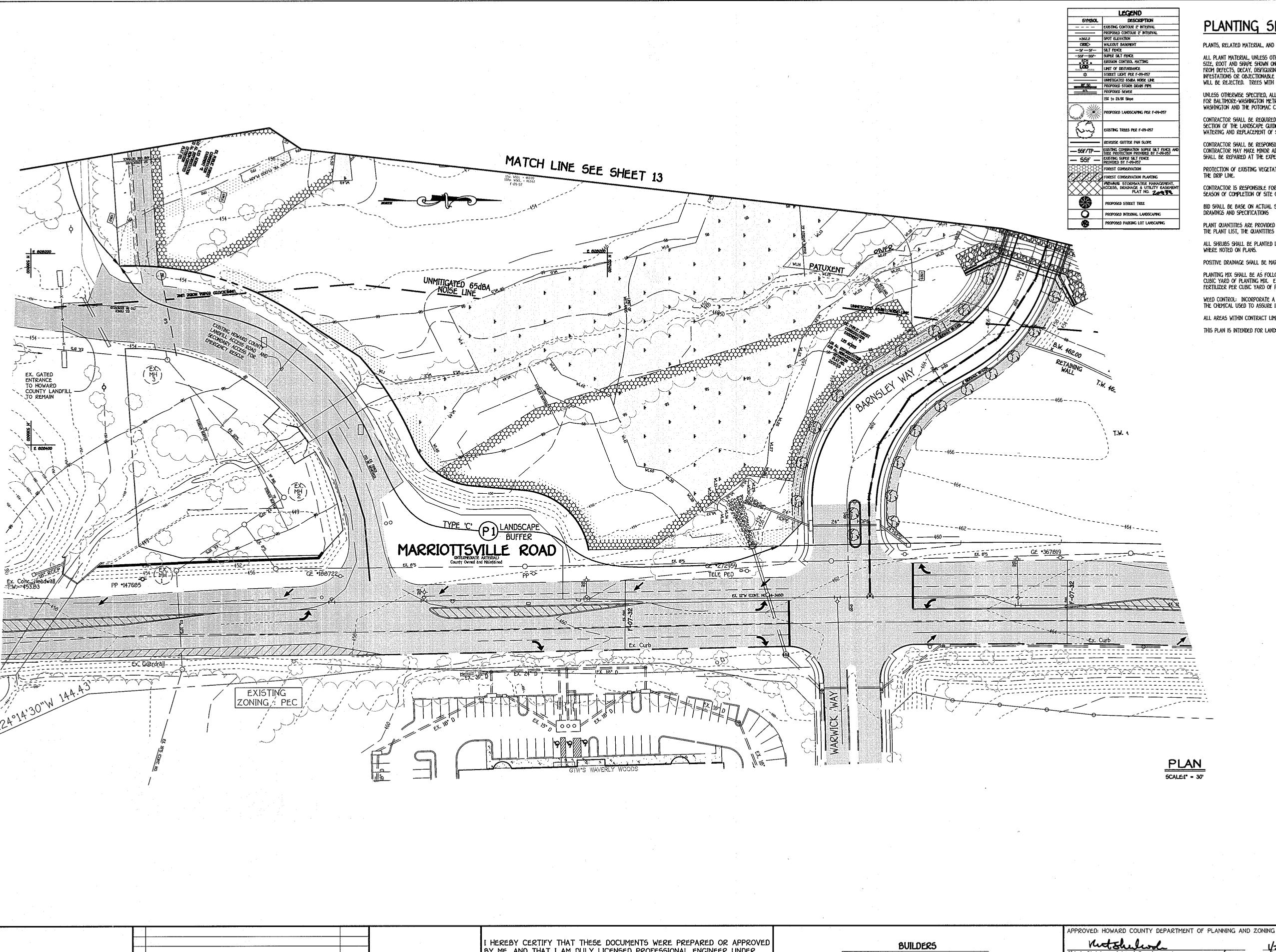












PLANTING SPECIFICATIONS

PLANTS, RELATED MATERIAL, AND OPERATIONS SHALL MEET THE DETAILED DESCRIPTION AS GIVEN ON THE PLANS AND AS DESCRIBED HEREIN.

ALL PLANT MATERIAL, UNLESS OTHERWISE SPECIFIED, SHALL BE NURSERY GROWN, UNIFORMLY BRANCHED, HAVE A VIGOROUS ROOT SYSTEM, AND SHALL CONFORM TO THE SPECIES, size, root and shape shown on the plant list and the american association of nurserymen (aan) standards. Plant material shall be healthy, vigorous, free FROM DEFECTS, DECAY, DISFIGURING ROOTS, SUN SCALD INJURIES, ABRASIONS OF THE BARK, PLANT DISEASE, INSECT PEST EGGS, BORERS AND ALL FORMS OF INSECT INFESTATIONS OR OBJECTIONABLE DISFIGUREMENTS. PLANT MATERIAL THAT IS WEAK OR WHICH HAS BEEN CUT BACK FROM LARGER GRADES TO MEET SPECIFIED REQUIREMENTS WILL BE REJECTED. TREES WITH FORKED LEADERS WILL NOT BE ACCEPTED. ALL PLANTS SHALL BE FRESHLY DUG; NO HEALED-IN PLANTS FROM COLD STORAGE WILL BE ACCEPTED.

UNLESS OTHERWISE SPECIFIED, ALL GENERAL CONDITIONS, PLANTING OPERATIONS, DETAILS AND PLANTING SPECIFICATION SHALL CONFORM TO "LANDSCAPE SPECIFICATION GUIDELINES" FOR BALTIMORE-WASHINGTON METROPOLITAN AREAS", CHEREINAFTER "LANDSCAPE GUIDELINES") APPROVED BY THE LANDSCAPE CONTRACTORS ASSOCIATION OF METROPOLITAN WASHINGTON AND THE POTOMAC CHAPTER OF THE AMERICAN SOCIETY OF LANDSCAPE ARCHITECT, LATEST EDITION, INCLUDING ALL AGENDA.

CONTRACTOR SHALL BE REQUIRED TO GUARANTEE ALL PLANT MATERIAL FOR A PERIOD OF ONE YEAR AFTER DATE OF ACCEPTANCE IN ACCORDANCE WITH THE APPROPRIATE SECTION OF THE LANDSCAPE GUIDELINES CONTRACTOR'S ATTENTION IS DIRECTED TO THE MAINTENANCE REQUIREMENTS FOUND WITHIN THE ONE YEAR SPECIFICATIONS INCLUDING

CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING UTILITY COMPANIES. UTILITY CONTRACTORS AND "MISS UTILITY" A MINIMUM OF 48 HOURS PRIOR TO BEGINNING ANY WORK. CONTRACTOR MAY MAKE MINOR ADJUSTMENTS IN SPACING AND LOCATION OF PLANT MATERIAL TO AVOID CONFLICTS WITH UTILITIES. DAMAGE TO EXISTING STRUCTURE AND UTILITIES SHALL BE REPAIRED AT THE EXPENSE OF THE CONTRACTOR.

PROTECTION OF EXISTING VEGETATION TO REMAIN SHALL BE ACCOMPLISHED BY THE TEMPORARY INSTALLATION OF 4 FOOT HIGH SNOW FENCE OR BLAZE ORANGE SAFETY FENCE AT

CONTRACTOR IS RESPONSIBLE FOR INSTALLING ALL MATERIAL IN THE PROPER PLANTING SEASON FOR EACH PLANT TYPE. ALL PLANTING IS TO BE COMPLETED WITHIN THE GROWING BID SHALL BE BASE ON ACTUAL SITE CONDITIONS. NO EXTRA PAYMENT SHALL BE MADE FOR WORK ARISING FROM SITE CONDITIONS DIFFERING FROM THOSE INDICATED ON

PLANT QUANTITIES ARE PROVIDED FOR THE CONVENIENCE OF THE CONTRACTOR ONLY. IF DISCREPANCIES EXIST BETWEEN QUANTITIES SHOWN ON PLAN AND THOSE SHOWN ON THE PLANT LIST, THE QUANTITIES ON THE PLAN TAKE PRECEDENCE

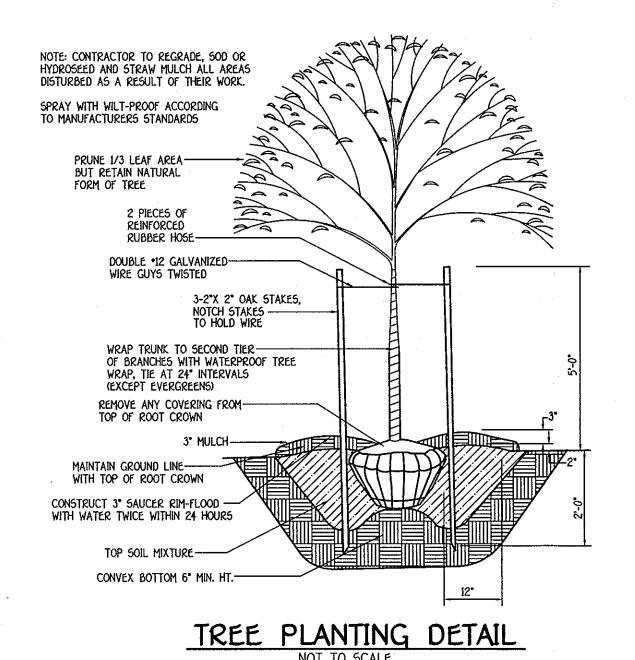
ALL SHRUBS SHALL BE PLANTED IN CONTINUOUS TRENCHES OR PREPARED PLANTING BEDS AND MULCHED WITH COMPOSTED HARDWOOD MULCH AS DETAILS AND SPECIFIED EXCEPT

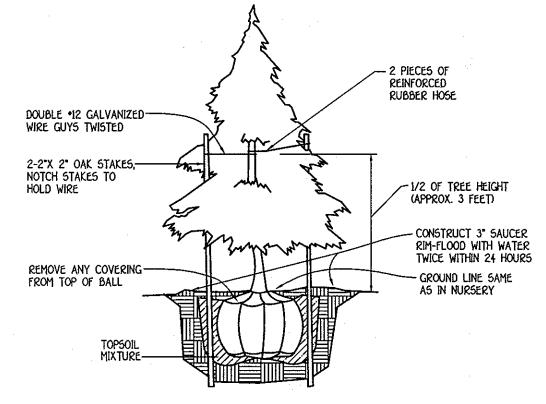
POSITIVE DRAINAGE SHALL BE MAINTAINED IN PLANTING BEDS 2 PERCENT SLOPE).

PLANTING MIX SHALL BE AS FOLLOWS: DECIDUOUS PLANTS - TWO PARTS TOPSOIL, ONE PART WELL-ROTTED COW OR HORSE MANURE. ADD 3 LBS. OF STANDARD FERTILIZER PER CUBIC YARD OF PLANTING MIX. EVERGREEN PLANTS - TWO PARTS TOPSOIL, ONE PART HUMUS OR OTHER APPROVED ORGANIC MATERIAL. ADD 3 LBS. OF EVERGREEN (ACIDIC) FERTILIZER PER CUBIC YARD OF PLANTING MIX. TOPSOIL SHALL CONFORM TO THE LANDSCAPE GUIDELINES.

WEED CONTROL: INCORPORATE A PRE-EMERGENT HERBICIDE INTO THE PLANTING BED FOLLOWING RECOMMENDED RATES ON THE LABEL. CAUTION: BE SURE TO CAREFULLY CHECK THE CHEMICAL USED TO ASSURE ITS ADAPTABILITY TO THE SPECIFIC GROUND COVER TO BE TREATED.

ALL AREAS WITHIN CONTRACT LIMITS DISTURBED DURING OR PRIOR TO CONSTRUCTION NOT DESIGNATED TO RECEIVE PLANTS AND MULCH SHALL, BE FINE GRADED AND SEEDED. THIS PLAN IS INTENDED FOR LANDSCAPE USE ONLY. SEE OTHER PLAN SHEETS FOR MORE INFORMATION ON GRADING, SEDIMENT CONTROL, LAYOUT, ETC.





EVERGREEN PLANTING DETAIL

FISHER, COLLINS & CARTER, INC. ELLICOTT CITY, MARYLAND 21042

ADD RECORDED LOTS AND REVISE EAGENENT PER F-10-113 11/18/10

BY ME, AND THAT I AM DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 9757 EXPIRATION DATE 15 2/28/10.

NV HOMES RYAN HOMES 6085 MARSHALEE DRIVE 6085 MARSHALEE DRIVE SUITE 140 SUITE 130 ELKRIDGE, MD. 21075 ELKRIDGE, MD. 21075 410-379-5956 410-379-5956

DEVELOPER WAVERLY WOODS DEVELOPMENT CORPORATION C/O LAND DESIGN AND DEVELOPMENT, INC. 5300 DORSEY HALL DRIVE, SUITE 102 ELLICOTT CITY, MARYLAND 21042 443-367-0422

WAVERLY WOODS DEVELOPMENT CORPORATION C/O LAND DESIGN AND DEVELOPMENT, INC. 5300 DORSEY HALL DRIVE, SUITE 102 ELLICOTT CITY, MARYLAND 21042 (443-367-0422)

K-02

OWNERS

LOT NOS. LOTS 6 THRU 11 & LOTS 40 THRU 45 TW'S WAVERLY WOODS ZONE TAX/ZONE ELEC. DIST. CENSUS TR. BLOCK NO. 20933 -20942 3 & 4 P5C WATER CODE SEWER CODE

5992000

STREET TREES AND LANDSCAPE PLAN

AGE RESTRICTED ADULT HOUSING GTW'S WAVERLY WOODS

SECTION 14 BULK PARCEL 'C' PLAT No. "THE COURTYARDS AT WAVERLY WOODS - WEST" PHASE I - LOTS 6 THRU 11 & 40 THRU 43

TAX MAP NO.: 16 GRID NO.: 3 & 4 PARCEL NO.: 120, 221 & 249
THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND SCALE: 1" = 50' DATE: JUNE 4, 2010 SHEET 14 OF 17

5DF-09-037

Maximum Density

8 D.U. per Net Acre

Minimum Lot. Yard and Height Requirements for Residential Lots

N/A Net Lot Area Front Yard (Minimum) Lot Width Minimum Frontage N/A N/A Lot Width at Building Restriction Line N/A N/A N/A N/A Rear Yard (Minimum) 40' Maximum Height

Minimum Building Setbacks

From Arterial/Collector Public Roads R/W Structures		
Front or Side	400'	400'
Rear	400'	400'
Uses	200	200'
From Other Public Road R/W Structures	• •	
Front or Side	40'	40'
Rear	40'	40'
Uses	20'	20,
Distance Between Units		
Face to Face Face to Side or Rear to Side Side to Side Rear to Rear Rear to Face	50° 30° 15° 40° 75°	50' 30' 15' 40' 75'
Distance between Units and Edge of Private Roadway & Parking Front Side	20' 15'	20' 15'
Rear	40'	40'
Accessory Structure *	30'	30,

* Including Recreational Amenities (Gazebo, pool, pool house and community building)

Maximum Limitations Units per structure N/A 210 FEET Building length

However. The Director of the Department of Planning and Zoning may approve a greater length, up to a maximum of 250 feet based on a determination that the design of the building will mitigate the visual impact of the increased length.

Parking Requirements

Parking Spaces Per Unit

2 Spaces 2 Spaces

Community Building (3.3 Spaces/1,000 sq. ft.) N/A

Additional, overflow/quest parking is required in accordance with Table 2.11 pf the Design Manual, Volume III, page 2-42.

SEE SHEET 1 FOR THE BEGINNING OF THE DEVELOPMENT CRITERIA.

THE COURTYARDS @ WAVERLY WOODS - WEST (S-06-013) AMENDED DEVELOPMENT CRITERIA PARKING COMPARISON CHART

SINGLE FAMILY ATTACHED AND DETACHED UNITS			
	Proposed on S-06-013	Ho. Co. Zoning Regulations	
Parking Spaces	2 Spaces/D.U.	2 Spaces/D.U.	

	<u> </u>		
COMMUNITY BUILDING			
	Proposed on S-06-013	Ho. Co. Zoning Regulations	
Parking Spaces	* 3.3 Spaces/1,000 Sq. Ft.	10 Spaces/1,000 Sq. Ft.	

PROVIDED 3.3 SPACES/1000 SQ.FT. FLOOR AREA FOR THE 4,490 SQ.FT. COMMUNITY BUILDING OR 15 PARKING SPACES IMMEDIATELY ADJACENT TO THE FACILITY WITH 35 OFF-STREET PARKING SPACES ALONG PROPOSED ROAD 'E' TO COMPLIMENT AN ULTIMATE AVAILABILITY OF 50 PARKING SPACES, IF NEEDED, 10 PARKING SPACES/1000 SQ.FT. FLOOR AREA FOR THE 4,490 SQ.FT. COMMUNITY BUILDING.

1 AND RECOCKE BUBLIC SENSE EASTENT PER F-10-113 11/16/10

THE COURTYARDS @ WAVERLY WOODS - WEST (S-06-013) AMENDED DEVELOPMENT CRITERIA PDP BULK REGULATIONS COMPARISON CHART

Bulk Regulations	Proposed 'PDP' on S-06-013	Howard County R-SA-8 Zoning Regulations
1. Maximum Density	8 D.U. per Net Acre	8 D.U. Per Net Acre
2. Minimum Structure & Use Setbacks		
a). From Arterial or Collector Public Street R/W		
(1) Structures		
(a) Front or Side	400'	30°
(b) Rear	400'	50'
(2) Uses	200'	30°
b). From Other Public Street R/W		e e
(1) Structures		
(a) Front or Side	40'	20'
(b) Rear	40'	40'
(2) Uses	20'	20'
3. Maximum Units per Structure		
a. SFA Villas	8-units	8-units
b. Building Length	210' (with max. of 250')	120' (with max of 300')
4. Maximum Height Shall Not Exceed		
a. SFA Villas, Detached Dwellings	40'	40'
b. Pool House and Community Bldg.	34' (per PSC Zoning Regs.)	
c. Accessory Structure	15'*	15'
5. Minimum Distance between attached dwelling Villas or between Single Family Attached and Detached Dwelling Villas		·
a. Face to Face	50°	30'
b. Face to Side or Rear to Side	30°	30'
c. Side to Side	15'	15'
d. Rear to Rear	60'	60'
e. Rear to face	100'*	100'
6. Minimum Distance between both SFA Villas and Single Family Detached and edge of Private Roadway & Parking		
a. Front	20'	N/A
b. Side	15'	N/A
c. Rear	40'	N/A
d. Accessory Structure	30***	N/A.

THE COURTYARDS @ WAVERLY WOODS – WEST AMENDED DEVELOPMENT CRITERIA LANDSCAPING/SCREENING COMPARISON CHART LANDSCAPE EDGE TYPES

SCHEDULE 'B'			
Туре	Proposed on S-06-013	Ho. Co. Landscape Manual	
Parking Lot Internal Landscaping	1 Tree per 10 spaces	1 Tree per 10 spaces	

SCHEDULE 'C'				
Residential Development Internal Landscaping	Proposed on S-06-013	Ho. Co. Landscape Manual		
For SFA Villas Units	1 Tree per 1 dwelling unit	1 Tree per 1 dwelling unit		

THE COURTYARDS @ WAVERLY WOODS - WEST S-06-013

AMENDED DEVELOPMENT CRITERIA LANDSCAPING/SCREENING COMPARISON CHART PERIMETER LANDSCAPE TYPES - BASED ON ADJACENT LAND USE

TABLE NO. 1				
Landscape Edge Type "A" (Light Buffer)	As Proposed On S-06-013	Ho. Co. Landscape Manual	Comments	
Shade Trees per L.F.	1:60	1:60		
Evergreen Trees per L.F.	0	0		
Shrubs per L.F.	0	0		
Landscape Edge Type "B" (Moderate Buffer)	As Proposed on S-06-013	Ho. Co. Landscape Manual	Comments	
Shade Trees per L.F.	1:50	1:50		
Evergreen Trees per L.F.	1:40	1:40		
Shrubs per L.F.	0	0		
Landscape Edge Type "C" (Heavy Buffer)	As Proposed On S-06-013	Ho. Co. Landscape Manual		
Shade Trees per L.F.	1:40	1:40		
Evergreen Trees per L.F.	1:20	1:20		
Shrubs per L.F.	0	0		
Landscape Edge Type "D" (Screen)	As Proposed on S-06-013	Ho. Co. Landscape Manual	Comments	
Shade Trees per L.F.	1:60	1:60		
Evergreen Trees per L.F.	1:10	1:10		
Shrubs per L.F.	0	0		
Landscape Edge Type	As Proposed	Ho. Co. Landscape	Comments	
"E" (Parking Adj. to Road)	On S-06-013	Manual		
Shade Trees per L.F.	1:40	1:40		
Evergreen Trees per L.F.	0	0		
Shrubs per L.F.	1:4	1:4		

THE COURTYARDS @ WAVERLY WOODS - WEST (S-06-013)

AMENDED DEVELOPMENT CRITERIA LANDSCAPING/SCREENING COMPARISON CHART LANDSCAPING EDGES ADJACENT TO ROADWAYS

		TABLE NO. 2	**************************************	
Land Use	Orientation of Structure to Roadway	Landscape Edge Type (Proposed on S-06-013)	Landscape Edge Type (Per Ho. Co. Manual)	Comments
Single Family Attached Villas	Front	None	None	
Single Family Attached Villas	Side/Rear	С	С	
Single Family Detached	Front	None	None	
Single Family Detached	Side/Rear	В	В	
Non-Residential	Front/Side	В	В	
Non-Residential	Rear-if loading	D	D	
Non-Residential	Rear	C	C	
Parking	N/A	B	Е	

THE COURTYARDS @ WAVERLY WOODS - WEST (S-06-013)

AMENDED DEVELOPMENT CRITERIA LANDSCAPING/SCREENING COMPARISON CHART LANDSCAPE EDGES ADJACENT TO PERIMETER PROPERTIES

TABLE NO. 3					
Land Use	Orientation of Structure to Structure	Landscape Edge Type (Proposed on S-96-913)	Landscape Edge Type (Per Ho. Co. Manual)	Comments	
Single Family Detached	All Uses	A	A		
Single Family Attached Villas	SFA	В	В		
Single Family Attached Villas	All Other Uses	A	A		
Non-Residential	Residential	C	c		
Non-Residential	All Other Uses	A	A		

FISHER, COLLINS & CARTER, INC.



I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 9757 EXPIRATION DATE IS 2/28/10.

BUILDERS NV HOMES RYAN HOMES
6005 MARSHALEE DRIVE 6005 MARSHALEE DRIVE ELKRIDGE, MD. 21075 ELKRIDGE, MD. 21075 410-379-5956 410-379-5956

DEVELOPER OWNERS WAVERLY WOODS DEVELOPMENT CORPORATION WAVERLY WOODS DEVELOPMENT CORPORATION C/O LAND DESIGN AND DEVELOPMENT, INC. C/O LAND DESIGN AND DEVELOPMENT, INC. 5300 DORSEY HALL DRIVE, SUITE 102 5300 DORSEY HALL DRIVE, SUITE 102 ELLICOTT CITY, MARYLAND 21042 443-367-0422 ELLICOTT CITY, MARYLAND 21042 (443-367-0422)

GTW'S WAVERLY WOODS BLOCK NO. ZONE 20933-20942

3 & 4

WATER CODE

K-02

PPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

SEWER CODE

5992000

1015 6 開创 11 色 1015 40 开始 45 TAX/ZONE ELEC. DIST. CENSUS TR. P5C

DEVELOPMENT CRITERIA

AGE RESTRICTED ADULT HOUSING GTW'S WAVERLY WOODS

SECTION 14
BULK PARCEL 'C' PLAT No. "THE COURTYARDS AT WAVERLY WOODS - WEST" PHASE I - LOTS 6 THRU 11 & 40 THRU 43

ZONING: PSC TAX MAP NO.: 16 GRID NO.: 3 & 4 PARCEL NO.: 120, 221 & 249
THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: 1" = 30' DATE: JUNE 4, 2010 SHEET 15 OF 17

^{*} Excluding any Poll House and Community Building
** Including recreational amenities (gazebo, pool, pool house, community building)

PART 1: GENERAL

1.81 Description

A. Work shall consist of furnishing and construction of a KEYSTONE Robaining Well System in accordance with these specifications and in reasonably close conformity with the lines, grades, design, and dimensions shown on

B. Work includes preparing foundation soll, furnishing and installing leveling pad, untit drainage fill and backfill to the lines and grades shows on the construction drawings. C. Work includes furnishing and installing geogrid soil reinforcement of the type, size, location, and lengths designated on the construction drawings.

1.82 Delivery, Storage and Handling A. Contractor shall check all materials upon delivery to assure that the peoper type, grade, color, and certification has been received.

B. Contractor shall protect all materials from damage due to job site conditions and in accordance with manufacturer's commendations. Damaged materials shall not be nearmorelist into the work.

PART 2: PRODUCTS

2.41 Modular Concrete Rotsining Wall Units A. Modular concerns units shall conferm to the following

architectural requirements: face color - concrete gray - standard manufacturers ocior may be specified by the Owner. face finish - eculatured rock face in angular tri-planer configuration. Other tace training will not be allowed without written approval of Gwner. bond configuration - running with bonds nominally located at adoptint vertically adjacent units, in both straight and

curved alignments.

exposed existes of units shall be free of chips, cracks or other imperfections when visued from a distance of 10

feet under diffused lighting.

B. Modular concrete materials shall conform to the requirements of ASTM C1872 - Standard Specifications for Segmentel Retaining Wall Units. C. Modular concrete units shall conform to the following structural and geometric requirements researced in accordance with appropriate refinences:

compressive strength = 3000 psi minimum; absorption = 8 % maximum (6% in northern states) for standard weight apprepaies; dimensional thiorances = ± 1/8" from persinal unit dimensions not including rough split face, ±1/16" unit height - top and bottom planes; unit size - 8" (H) x 18" (W) x 18" (D) minimum: unit weight - 100 ibs/unit minimum for standard weight

eggregates; Inter-unit shear strength = 1000 ptf minimum et 2 psi normal pressure; geograficative peak connection strength - 1000 pit minimum et 2 pei normel force.

D. Modular concrete units shall conform to the following: constructability requirements: vertical selback = 1/8"s per course (near vertical) or 1"+ per course par the design; alignment and grid positioning mechanism - Roargiass pins, two per unit minimum; maximum horizontal gap between erected units shell be

A. Shear connectors shall be 1/2 inch diameter thermoset isopthalic polyester resin-protruded filterglass reinforcement rods or equivalent to provide connection between vertically and horizontally adjacent units.

Strengtis of shear connectors between vertical adjacent units shall be applicable over a design temperature of 10 degrees F to + 100 degrees F. B. Shear correctors shall be capable of holding the geogrid in the proper design position during grid pre-tensioning and backfilling.

2.03 Base Leveling Pari Meterial A. Material shall consist of a compacted #57 crushed stone base as shown on the construction deswings.

2.04 Unit Drainage FM

A. Unit drainage (iii shall consist of #67 crushed stone

2.05 Reinforced Backfill

A. Reinforced backfil shall type SM, be free of debris and meet the following gradelion tested in accordance with ASTM D-422 and meet other properties shown on the

> 3/4 inch No. 40 0-80

B. Material can be also excavated soils where the above requirements can be met. Unsuitable soils for backfill (high plastic clays or organic soils) shall not be used in the seinforced soil mass.

Planticity Index (PI) <10 and Liquid Limit <40 per ASTM

2.06 Geograd Soll Reinforcement

A. Geosynthetic reinforcement shall consist of geogrids manufactured specifically for solf reinforcement

D. Geogrid reinforcements shall be continuous throughout applications and shall be manufactured from high tenacity their embedment lengths and placed side-by-side to provide 100% coverage at each level. Spliced connections between shorter pieces of geogrid or gaps

2.87 Drainage Pipe A. The drainage pipe shall be perforated corrugated HDPE pipe manufactured in accordance with ASTM D-1248.

PART 3 EXECUTION

A. Contractor shall excavate to the lines and grades shown on the construction drawings. Owner's representative shall be responsible for inspecting and approving the exavation prior to placement of leveling material or \$1.

3.92 Base Leveling Pad

A. Leveling pad material shell be placed to the lines and grades shown on the construction drawings, to a minimum thickness of 8 inches and extend telerally a minimum of 8° in front and behind the modular wall unit.

B. Leveling pad shall be prepared to insure full contact to the base surface of the concrete units. 3.03 Modular Unit Installation A. First course of units shall be placed on the leveling pad at

the appropriate time and grade. Alignment and level shell

be checked in all directions and insure that all units are in full contact with the base and properly seated. B. Place the front of units side-by-side. Do not leave gaps between adjacent units. Layout of comers and curves shell be in accordance with manufacturer's

C. install shear/connecting devices per manufacturer's D. Place and compact drainage fill within and behind wall

Follow wall erection and drainage filt closely with structure E. Maximum stacked vertical beight of wall units, prior to unit creinage fill and backfill placement and compaction, shall

units. Place and compact backfil soil behind drainage fil.

not exceed three courses. 3.84 Structural Geograd Installation

A. Geogral shall be oriented with the highest strength exis perpendicular to the wall alignment. B. Geomid reinforcement shall be placed at the strengths,

lensitis, and elevations shown on the construction design

drawings or as directed by the Engineer.

C. The geogrid shall be laid horizontally on compacted backfill and attached to the modular wall units. Place the next course of modular concrete units over the geogrid. The geogrid shall be pulled taut, and anchored prior to

backfil piscement on the geogrid.

between adjacent pieces of geogrid are not permitted.

3.05 Reinforced Backfill Placement A. Reinforced bacidili shall be placed, spread, and compacted in such a manner that minimizes the development of stack in the geogrid and installation

damage.

B. Reinforced backfill shall be placed and compacted in lifts not to exceed 6 inches where hand compaction is used, or 8 - 10 inches where heavy compaction equipment is used. Lift thickness shall be decreased to achieve the required density as required.

· C. Reinforced backfill shall be compacted to 95% of the meximum density as determined by ASTM D698. The moisture content of the backet material prior to and during compaction shall be uniformly distributed throughout each layer and shall be + 3% to - 3% of optimum,

D. Only lightweight hand-operated equipment shall be allowed within 3 feet from the tail of the modular concrete

E. Tracked construction equipment shall not be operated directly upon the geogrid reinfercement. A minimum fill thickness of 6 inches is required prior to operation of tracked vehicles over the geogrid. Tracked vehicle turning should be kept to a minimum to prevent tracks from displacing the fill and damaging the geogrid. F. Rubber fired equipment may pass over geogrid

reinforcement at slow speeds, less than 10 MPH. Sudden braking and sharp turning shall be avoided.

G. At the end of each day's operation, the Contractor shall slope the last lift of reinforced backill away from the wall units to direct runoff away from wall face. The Contractor shall not allow surface runoff from adjacent areas to enter the wall construction site.

3.06 Cap Installation

A. Cap units shall be glued to underlying units with an all-weather adhesive recommended by the manufacturer.

3.07 Field Quality Control

A. The Owner shall engage inspection and testing services, including independent laboratories, to provide quality assurance and testing services during construction.

B. As a minimum, quality assurance testing should include

foundation soil inspection, soil and backfit testing, verification of design parameters, and observation of construction for general compliance with design drawings and specifications.

1.) No trees shall be planted within 10 feet of the top of the retaining wall. 2.) Retaining walls shall only be constructed under the observation of a registered professional. engineer and a (NICET, WACEL, or equiv.) certified soils technician.

3.) The required bearing pressure beneath the wall system shall be verified in the field by a certified soils technician. Testing documentation must be provided to the Howard County Inspector prior to start of construction. The required bearing test shall be the Dynamic Cone Penetrometer test ASTM STP-399.

4.) The suitability of fill material shall be confirmed by the on-site soils technician. Each 0" lift must be compacted to a minimum 95% standard proctor density and the testing report shall be made available to the Howard County Inspector upon completion of construction.

BOTTOM GRADE ----

(SLOPE VARIES)

5.) Walls shall not be constructed on uncertified fill materials,

6.) Walls shall not be constructed within a Howard Co. right-of-way or easement. **FENCE PER HOWARD COUNTY** CODE AND STANDARD DETAILS - TOP GRADE (SLOPE VARIES) 7° FACE BATTER -CONTINUOUS MIRAFI 140-N FILTER FABRIC BARRIER ON TOP OF #57 STONE - MIRAGRID GEOGRID LENGTH VARIES -STANDARD KEYSTONE BLOCK - COMPACTED FILL ~ TYPE SM y = 125 PCF $\varnothing = 28^{\circ} \text{ MIN}$

TYPICAL WALL SECTION

NOTE: FENCE SHALL BE MIN. 36" TALL AND HAVE MAX. 4" OPENINGS BETWEEN PICKETS.

NTS

57 CRUSHED STONE

~ SUBGRADE APPROVED ~

FOR 2500 PSF BEARING

4" HDPE DRAIN PIPE

WRAPPED IN FILTER FABRIC

WITH 2" PVC WEEP @ 20' O.C.

- 2" WIRE MESH GAUGE PER SPECS; TENSION WIRE •7 GAUGE STEEL CHAIN LINK FABRIC SELVAGES BARBED •6 GAUGE ALUMINUM ALLOY & TWISTED; SEE VOLUME IV. SECT. 912, STANDARD SPECIFICATIONS - CHAIN LINK VINYL CLAD STEEL FABRIC (COLOR: BLACK) > LINK BANDS X1.66° O.D. PIPE © X2.27 °/FT. IN STEEL •.796 °/FT. IN ALUMINUM •13 GAUGE STEEL •9 GAUGE ALUMINUM LLOY 1100-H14 or H18 (SEE STDS. BRACE BAN SPACE UNDER FABRIC 6" MAXIMUM 10" DIAMETER DRIVE ANCHOR -18" DIAMETER SQUARE OR ROUND CONSTRUCTION ALTERNATE TO CONC. FOOTER SEE STD. DETAIL MD-690.21 ALL POSTS (TERMINAL & LINE) TO BE SAME LENGTH (L)

REVISIONS:

DETAIL CHAIN LINK FENCE NO SCALE

TENSION WIRE CLIP • 18" + c/c 12 1/2 GA. GALVANIZED STEEL WIRE 0.110 ALUMINUM WIRE ALLOY 5050-H30 SEE STANDARD DETAIL GO.02 FOR BRACE & ROD ATTACHMENTS

JOB NUMBER:

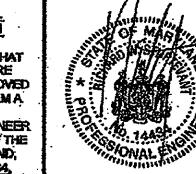
DESIGNED BY:

APPROVED BY:

DRAWN BY:

PROFESSIONAL CERTIFICATION HEREBY CERTIFY THAT THESE PLANS WERE REPARED OR APPROVED BY ME, AND THATTAM A. DULY LICENSED ROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND RWS EXPIRATION DATE: BEN 3/05

WALL LOCATION PLAN



RETAINING WALL PLAN & CONSTRUCTION DETAILS

Stone Reservoir No. 1
For Rey Requirement

AGE RESTRICTED ADULT HOUSING SECTION 14 BULK PARCEL 'A' PLAT No.

"THE COURTYARDS AT WAVERLY WOODS - WEST" PHASE I - UNITS 2 THRU 7 & 36 THRU 39 TAX MAP NO.: 16 GRID NO.: 3 & 4 PARCEL NO.: 120, 221 & 249 THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND

SCALE: 1" = 30' DATE: OCTOBER, 2009

SHEET 16 OF 17 5PP-09-037

ENGINEERING ASSOCIATES Annapolis Junction, MD

Faoc: (410)880-4098

GTW JOINT VENTURE 14451 TRIADELPHIA ROAD.

DEVELOPER

SUITE 102, 5300 DORSEY HALL DRIVE ELLICOTT CITY, MARYLAND 21042 (443) 387-0422

WAVERLY WOODS DEVELOPMENT CORP.

57 CRUSHED ___

STONE BASE

GLENELO, MARYLAND 21797-0030

(410) 442-2337

10975 Gulliord Road, Suite A

